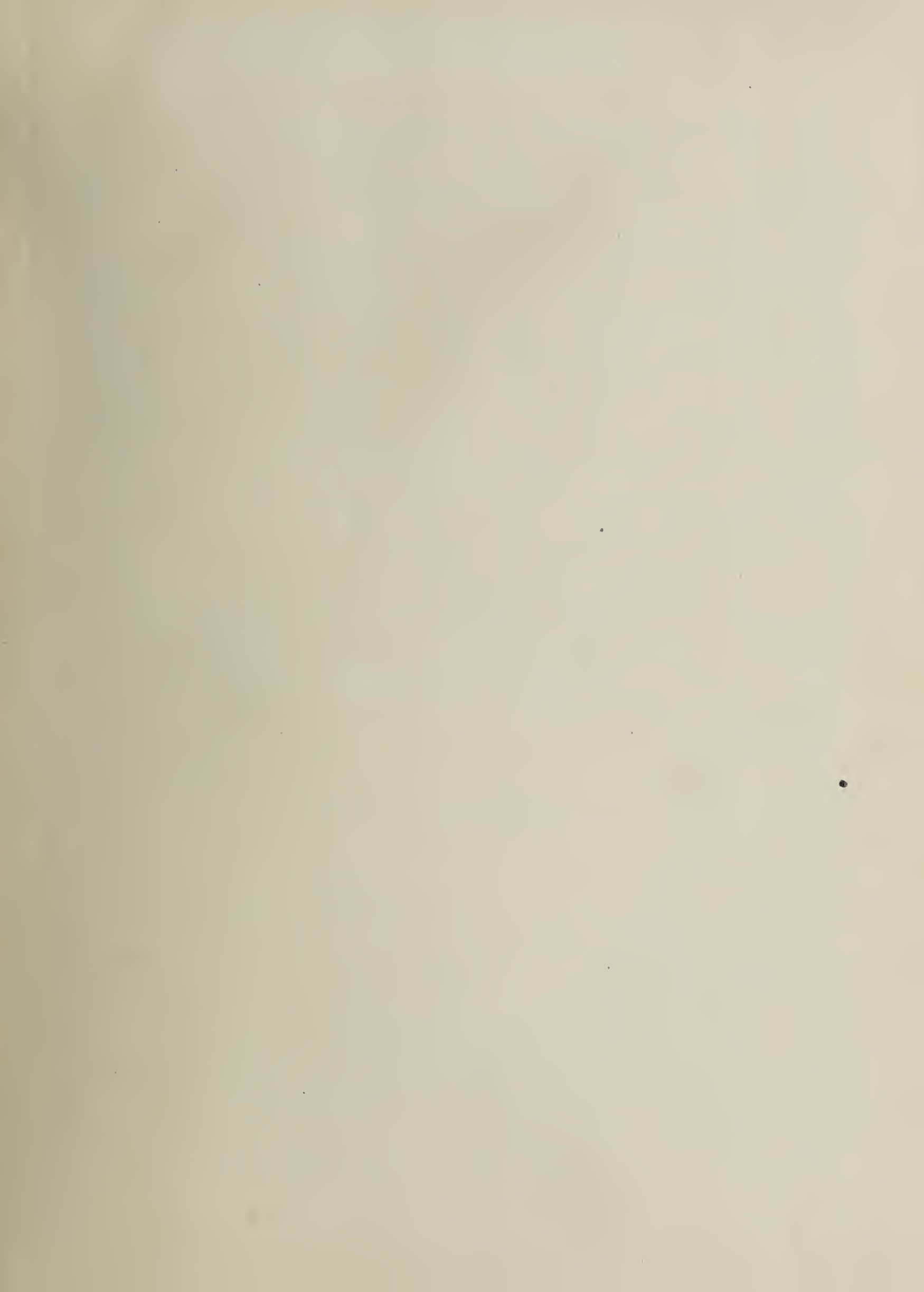


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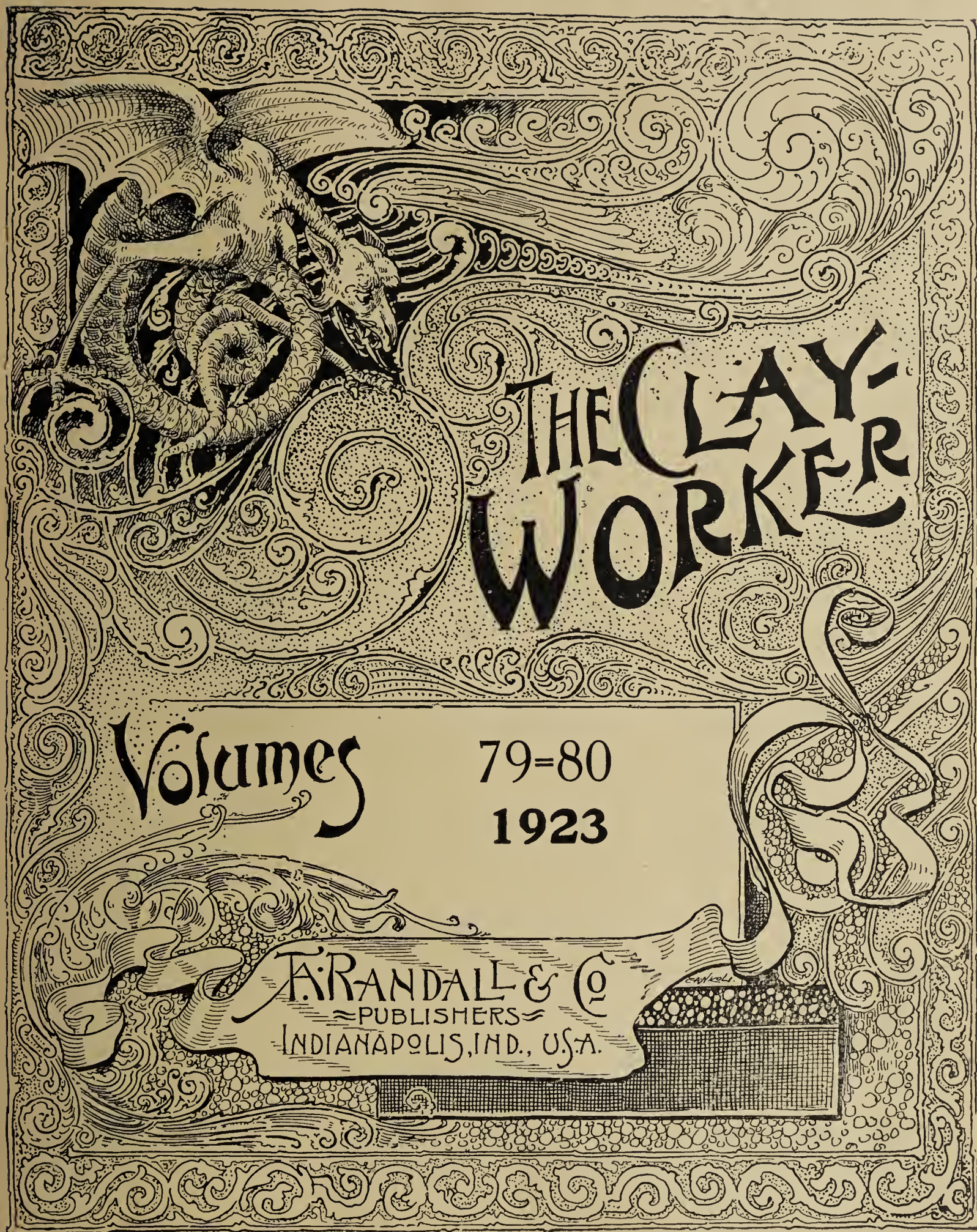
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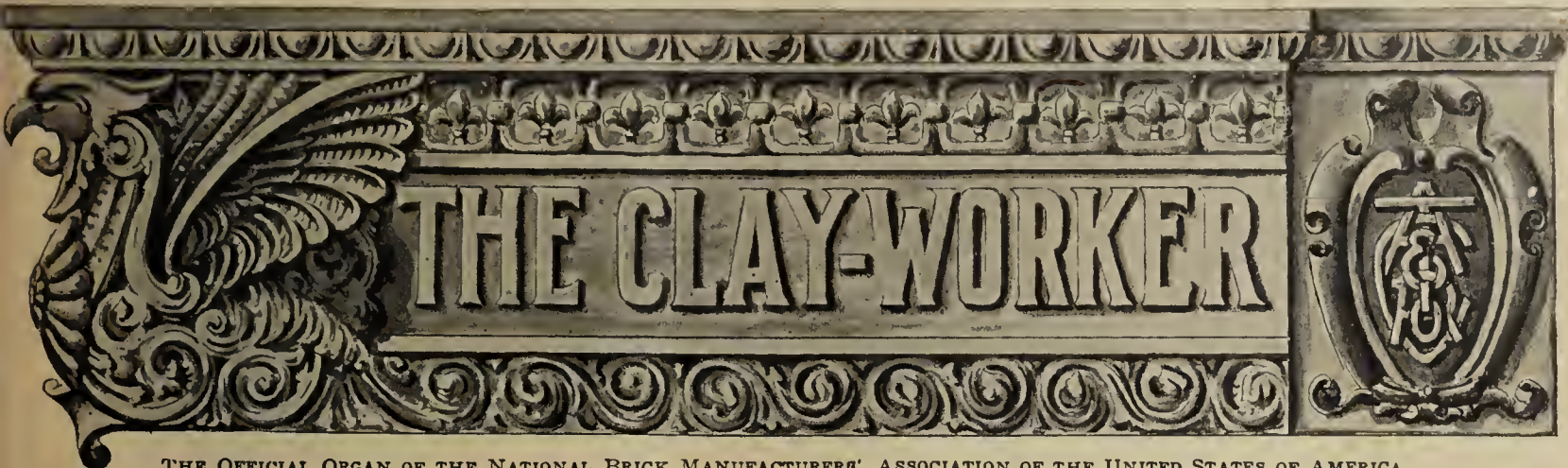
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THE CONVENTION CITY A GREAT CLAY CENTER

Eighteen Clay Products Plants Located in Cleveland, Ohio, Most of Which Operate Throughout the Year, Producing an Enormous Quantity of Common Brick, Face, Paving and Sewer Brick and Hollow Tile. Some Unusual Features in Equipment and Methods of Operation. ❀ ❀

CLAY products manufacturers will find much of interest to them in Cleveland, Ohio, for although a large city ranking fifth in population in the United States and a city of beautiful homes, churches and buildings, it possesses within its confines and environs eighteen clay product plants, varying considerably in equipment and method of operation. The majority of these operate throughout the year.

Cleveland is an immense manufacturing center and there are many reasons why it should be. It is located in the center

ing with all ports upon these inland seas. The city has eight passenger boat lines, nine interurban lines and is served by seven trunk lines which are connected by a "Belt Line," giving Cleveland one of the best transportation systems in the country. So it is not surprising to learn that Cleveland leads the country in production of wire, nails, bolts and screws, malleable castings and heavy machinery, electric batteries, twist drill, steel forgings, plumbers' fixtures, vacuum sweepers, hardware, job printers' presses, astronomical appliances,



The Unique Outdoor Illuminated Display of the Cleveland Builders' Supply and Brick Co., Cleveland, Ohio.

of the most enterprising portion of the country, more than half of the population of the United States lives within 500 miles of Cleveland and much more than half of all the manufacturing done in our entire country is also done within less than 500 miles radius. Cleveland is situated not only at a point where raw materials in many important lines can be collected at low cost, but is also within easy reach of wonderful markets which have a remarkably steady buying power.

Cleveland owns or controls two-thirds of all the shipping upon the Great Lakes, with forty-five steamship lines connect-

manufacture of varnish and paint, and production of automobile parts and accessories. It is claimed that out of every dollar invested in automobiles in the United States thirty cents goes to Cleveland.

Cleveland ranks second in production of women's ready-to-wear garments. And not the least important fact about Cleveland is that it is a great producer and user of clay products, for immense quantities of these are made from the shale and clay deposits found in and surrounding the city.

The fact that Cleveland with a population of nearly one

million leads the nation in home owning (35 per cent of the population live in their own homes) and the large majority of these homes are built of clay products, indicates the enterprising nature of its people and how acceptable are the clay products made and sold there.

The production of clay products in Cleveland totals above 15,000,000 face brick, 30,000,000 paving brick and 250,000 tons of hollow tile annually. Small amounts of pottery and other clay products are made also. Nearly all the output is sold in Cleveland and its environs, but Cleveland also consumes a great amount of other clay products not made in her own plants, such as terra cotta, fire brick, flue linings, wall copings, sewer pipe, roofing tile, electrical conduits, quarry tile, etc. These and the entire output of clay products made in Cleveland are sold by such concerns as Cleveland Builders Supply and Brick Co., Hydraulic Pressed Brick Co., R. L. Queisser Co., Medal Paving Brick Co., Cleveland Clay Co., Ohio Clay Co., Independent Brick and Tile Co., Cleveland Brick and Clay Co., Collinwood Shale Brick and Supply Co., and the Superior Brick Co. The Stowe Fuller Co. and Dover Fire Brick Co., with offices in Cleveland deal exclusively in refractory materials.

The Cleveland Builders Supply and Brick Co.

The most unique organization in the building material line in any part of the country today is that of the Cleveland Builders Supply and Brick Co., with offices covering the entire tenth floor of the Leader-News Building. The story of the consolidation which absorbed fourteen plants and several selling agencies was told in 1919. It is not new to our readers so we will not take space to review the history of this organization. Suffice to say, that it now owns fourteen warehouses, five docks and fourteen plants, making thirty-three distributing points. The plants absorbed were the three of the Farr Brothers, three of Camp Conduit Co., two of Barkwill and those of Newburg Brick and Clay Co., Metropolitan Paving Brick Co., the Cuyahoga Brick and Shale Co., American Building Brick Co., Standard Brick Co. and Cullen Brick Co. The warehouses are equipped with every modern appliance needed to facilitate speedy and economical handling of materials. The docks have individual cranes and overhead bins from which five-ton trucks can be loaded quickly.

The company owns its own boats for bringing in sand from Lake Erie as well as cargoes of stone and gravel, but these do not always meet requirements for other boats oftentimes have to be chartered. The company owns and operates five common brick plants with daily capacity of 1,000,000 brick, six hollow tile plants with a capacity of 1,000 tons daily, one face brick plant with a production of 60,000 daily and a concrete products plant on which is made concrete blocks and concrete roofing tile. Besides these they own and operate several sand plants and plaster mills wherein is made their special sanded plaster, Klingstone stucco, Mason's Myx Cement Topping and other proprietary mill mixed products.

Truck Their Product Over a 200 Square Mile Area.

The territory covered by this company extends twenty-five miles along the shore of Lake Erie and an average of eight miles south. By combining production and distribution, long hauls, cross hauls and duplication of effort have been eliminated to such an extent that one standard price on commodities handled prevails in all sections of the 200 square miles covered. The delivery equipment consists of eighty trucks and one hundred and fifty teams and wagons, owned by the company, and an additional fifty to eighty trucks daily hired as required.

When operating to capacity 3,000 employes are on the pay roll. Mr. John A. Kling is President; W. T. Rossiter, Vice-President; H. Schmitt, Secretary; L. B. Koblitz,

Treasurer; E. S. Barkwill, Vice-President, as well as E. W. and H. J. Farr, Frank Aulenbacher, sales manager, and Ernest C. Roberts, advertising manager.

The salesmen for the company are live wires who make the plant managers step lively to keep production up to the demand. This is evidenced by the hustle and bustle in the Cleveland Builders Supply and Brick Co. offices. The work of the sales force is facilitated to a great extent by the actively continued policy of publicity handled so admirably by their advertising manager, Ernest Roberts, and his able corps of workers. Attractive advertisements and publicity matter appear frequently in the press, a monthly magazine styled Material Facts is issued regularly and an unusually interesting exhibit that shows value of building materials in a graphical way is constantly in use being delivered and displayed at school buildings and other educational institutions whenever and wherever Mr. Roberts is scheduled to make a talk.

An Unusual Bit of Advertising.

The progressiveness of this concern is also shown in the unique outdoors display located at Fifty-fifth and Superior near the Pennsylvania depot. One of the illustrations used in connection with this article gives the reader but a fair idea of the attractiveness of this rather unusual bit of advertising consisting of a beautiful brick home painted on a flat surface actual size and so constructed with glass windows and doors that it can be illuminated at night so perfectly that the approaching pedestrian or autoist is completely deceived until within very close proximity to same. Billboards on either side of the main display advertise the company and its product.

But behind this selling force and a capable executive board there must obtain of necessity for real success a good system of plant management. This is most capably handled by E. W. and H. J. Farr.

Space will not permit of elaborate description of the interesting plants owned and operated by this company, but the following will give our readers a good idea of the equipment and methods of operation:

The Reeves Plant

The Reeves plant was formerly known as the F plant of the Farr Brick Co. This plant is located on Reeves Avenue south of Independence Road two and one-quarter miles, air line, from the square. The company owns here 175 acres of clay land, averaging seventeen feet of a surface stratum and a twenty-foot bed of commercial building sand. There is an immense deposit of blue clay beneath this. Where formerly it was necessary to transport the clay across a suspension bridge over a ravine which separated the clay land from the plant proper this has been eliminated by the ravine being filled up by wastage from the plant of the American Steel & Wire Co. The clay is moved by means of a Thew No. 3 shovel. It is dumped into five yard Western dump cars which are hauled to the plant by means of a fifteen-ton Porter engine. This engine hauls clay from this pit to both the Reeves and Independence plants.

The clay goes through an automatic process; a chain clay feed takes the clay from the bottom of a bin and feeds it automatically into a Wellington crusher, thence conveyed to a two-way pugmill. The brick are molded in two International Clay Machinery Company's Hercules soft mud brick machines, from whence they are conveyed to a steam drier by a chain conveying system.

This pipe rack drier has a capacity of 130,000 daily. Eight hours are required in the drying. The brick are burned in seven up-draft permanent wall kilns. Each kiln holds 480,000; it takes sixty-six to seventy-two hours to burn a kiln. These

kilns are burned with oil which has proven a more constant fuel than either gas or coal and with 6-cent oil is equivalent to \$6 coal. The company is paying less than 6 cents for oil, but claims that up to a 6-cent price they would use oil in preference to any other fuel on this plant.

At this plant is located a large garage for the six automobiles used here. The same size garage is used on the Independence plant.

The immense deposit of fine building sand found on the property of the Reeves yard is used in a concrete block plant located on Hugo and Beyerle Roads, in which both concrete block and concrete roofing tile are made. A steam shovel and a Hummer screen are used in the sand pit.

Independence Plant

This factory formerly known as Farr's G plant is located one-quarter of a mile from the Reeves plant on Independence Road. The company owns 57 acres here, consisting of 25 feet of clay, 20 feet of sand (of as good quality as lake sand), seven feet of molding sand and a 300-foot sub-stratum of clay.

The clay is taken off by means of a Thew steam shovel,

Western Electric voltage regulator, which is an important item in controlling voltage changes, since it holds it uniform.

The Reeves and Schaff plants are steam driven, while the Independence plant is electrically driven. The Schaff plant is a two-unit plant, one formerly the Farr H and the second one of the Barkwill plants. Two Arnold Creagor machines are employed on one unit. The brick are dried in a Wellington drier, 60,000 brick are made here daily. The second unit has Wellington pugmills, granulators, disintegrators, complete conveying system, two Wellington brick machines and two Strickland automatic dumpers, and Wellington drier; 130,000 common brick are made daily.

The Kinsman Plant

This plant formerly operated by Barkwill, is located at the foot of Seventy-fifth Street, south of Kinsman Road, about three and one-half miles southeast of the square. A large amount of stripping is done here, taken off by means of a Thew O shovel for stripping only. A Schofield Burket excavator digs the clay. The clay bank is 70 to 80 feet high. The cars of clay are taken to the plant by means of a self-con-



The Reeves Plant of the Cleveland Builders' Supply and Brick Co.

while a clam shell bucket sand loader and Hummer screen are used in the sand bank. The molding sand is used in all of their plants. A brick tunnel has been constructed under the road which gives them access to the clay lands on that side and meets the requirements of the city. The track in the clay field is built on a level with the top of the storage bin. A steam locomotive hauls the Western dump cars to the plant. The clay is dumped into a bin which provides a large storage for clay. This plant has the same process and same equipment as the Reeves plant. The brick are burned in six up-draft kilns holding 550,000 each.

There is a large barn here which houses approximately 116 head of horses. Three teams are employed at each plant for trucking, besides six White trucks at each plant. Extra trucking equipment is hired as required.

This barn has elevating conveyors, driven by motor for taking hay and grain into the mow. This motor also operates a feed grinder. The horses are scientifically fed, great care and kindness being exercised. The barns are thoroughly clean and lighted with electricity.

The power of the plant is made with a 200-H. P. Skinner engine direct connected to a Westinghouse generator and a

tained steam hoist and winding drum, the cars are drawn up a 14 per cent incline. The clay is dumped as needed into a roll crusher which has two sets of rolls, one 18 inches in diameter and 28 inches long, the other 20 inches in diameter and 28 inches long. These revolve at different speeds.

A Wellington single geared pugmill, two Wellington machines, a Potts sander and the Wellington pallet system of drying are used here. The company expresses great satisfaction with this equipment. 128,800 brick are made daily on both machines in eight hours, one-inch pipe, 16 high, 5-inch center, equipped with No. 4 Strong low pressure, steam traps, low pressure valves are used in the heating system. Standard cables carry the pallets to any part of the drier. The pallets are 12 and 19 gauge steel, 10x38 in dimensions.

The brick are dried in 24 hours in a Wellington drier and then taken to the up-draft permanent wall kilns (seven with 500,000 capacity each). The brick are burned with oil. This plant is operated the year round. Within a stone's throw of this yard is the

Vernon Plant

Here are manufactured hollow tile from shale. The plant formerly manufactured brick, but when the clay was exhaust-

ed the company (then Barkwill Brick Co.) turned their attention to the shale deposits located here and soon began manufacturing high grade hollow building tile.

The shale is mined with a Thew No. 4 shovel. The equipment of the plant consists of Atlas and Lakewood cars, two Bonnot 9-foot dry pans and elevating machinery and Hadfield-Penfield Steel Company's screens, pugmill, tile machine and cutting table. The plant runs on 4x5x12-inch and 5x8x12-inch tile for back-up block.

The machine is large enough to turn out 300 tons daily.

There are 330 cars of the triple-deck type, 30-inch gauge roller bearing, 39½ inches wide, 84 inches long.

A 31 tunnel Rodgers waste heat drier, dries the ware in 24 hours.

The ware is burned in 15 beehive down-draft, 32-foot kilns; it takes 66 hours to burn with coal. The Boss system of burning is used here and gives most satisfactory service.

Depressed tracks are built along the kiln yard and the material is gravitated direct from kilns to cars by means of a Mathew Gravity carrier system.

The Dennison Plant

This yard formerly owned by the American Building Brick Co. (Koblitz) is located four miles from the public square in



Wellington Machine and Potts Sander on Kinsman Plant.

the heart of the city. Paved roads lead to the very doors of the plant, thus giving excellent facilities for quick delivery by truck or team. 130,000 brick are made daily.

The equipment of the plant consists of Western dump cars, Milwaukee gasoline locomotive, 1 Dupuy automatic horizontal type brick machine, and a drier, six units of which are the Wellington type and one the Dupuy. This plant is operated on a two ten-hour shift plan running day and night.

The ware is burned with fuel oil in permanent wall kilns, each holding from 750,000 to 1,000,000 brick.

The Pearl Plant

This was formerly operated by the Cuyahoga Brick and Shale Co., and has many fine features. A splendid quality hollow building tile, radial blocks for stacks and drain tile of fine color are manufactured.

This plant, which is 11 years old, is located six miles southwest of the square. The company owns 40 acres of rich shale land with no stripping, the face of the bank being about 30 feet.

A Thew No. 2 shovel digs the shale. Lakewood cars carry the raw material to the plant, a winding drum and cable being used to draw them upon a trestle where the shale is dumped

on either side. Conveying belts in the floor of the shale storage shed feeds the material into two Bonnot 9-foot pans as needed. Bonnot elevators take the ground shale to a point above the Bonnot screens. The screened material drops by gravity into a storage bin, thence into a feeder supplied by the Louisville Machine Co. The Fate-Root-Heath Co. combination pugmill and brick machine, a Louisville Machine Co. hand cutting table, Bensing automatic cutter and Lakewood cars are used. An L. E. Rodgers 26 track waste heat drier dries the ware most satisfactorily.

Two hundred tons of ware are made daily, burned in



View of Wellington Dryer on Kinsman Plant.



Kiln Yard of Vernon Plant of C. B. S. & B. Co.

eighteen round down-draft kilns, six of which are 30 feet, the others 32 feet wide. The ware is burned with coal.

An electric transfer (Lakewood Engineering Co.) is used for hauling the cars from drier to kilns.

A Mathews gravity carrier system is used here to splendid advantage in emptying the kilns directly into the freight cars on depressed tracks extending along either side of the kiln yard. The plant is electrified.

Terminal and Brookside Plants

These factories were formerly owned and operated by the Camp Conduit Co. They are great producers of hollow ware, one known now as the Terminal plant of the Cleveland Build-

ers' Supply and Brick Co. is located eight miles from the public square, while the second, known now as the Brookside plant, is only four miles from the center of Cleveland, at 48th St. and Dennison Ave. The former was built in 1907, while the latter was erected in 1910. About fifty thousand tons of ware are made annually, consisting of hollow building material, including floor arches and partition tile. These plants are operated the year through. Seventy acres of shale land are owned by the company at each plant, with similar formations, each having a 70-foot face.

The material is blasted and taken to the plants up inclines in cars by means of winding drum and cable. Dry pans (Phil-



A Time Saving Conveying System on the Vernon Plant.



Machinery Room at Denison Plant.

lips-McLaren and Hadfield-Penfield Steel Co.) are used in both factories, but the Terminal plant uses two sets of wet pans (Taplin Rice Clerkin Co.) also two Taplin Rice Clerkin Co. steam presses. The E. M. Freese Co. combined machines are used.

Waste heat is used in drying at the Brookside yard, while exhaust steam is used at the Terminal. It requires two days to dry with exhaust steam and 30 hours to dry with waste heat.

The ware is conveyed from machine to dryer by transfer cars; coal is used in the burning. There are 14 round down-draft kilns at the Terminal, while 8 kilns suffice at Brookside yard. Each kiln is turned weekly.

The Jennings plant of the Cleveland Builders' Supply and Brick Co. is located on Jennings Road and was formerly the

old Eggers plant. Here are manufactured 40,000 shale sewer brick daily. Fate Root Heath equipment is used. The ware is burned in 10 beehive kilns.

The Warner Plant

This yard was formerly owned by the Newburgh Brick and Clay Co. The plant was erected in 1905 and was burned out twice. The present factory is of steel construction throughout and is known as the least combustible plant of any of those in Cleveland.

The raw material is obtained from a bank to the rear of the plant. There is no stripping; there is a 100-foot face 10 to 12 feet of it being clay, with some sand and a very little cobblestone, while the balance is a high grade shale. They



Fate-Root Heath Co.'s Cutting Table for Hollow Tile on Pearl Plant.

blast and then load by means of a Marion electric shovel of the Caterpillar type. The loaded cars go by gravity to the plant and are returned part way by gravity, the rest of the way by mule. 175 tons of hollow ware are made daily.

A large storage shed is equipped with conveying belts for conveying material as needed to the dry pans and to storage space. A Stevenson single roll crusher and two Bonnot dry pans are used.

The screened material drops from the Ceramic Engineering Co.'s screens into a storage bin from whence it is delivered as needed into a 10-foot E. M. Freese Co. pugmill. The pugged clay then passes into an immense Fate brick machine. The drier cars are of the Lakewood Engineering Co.'s make.

The hollow tile are dried in a fourteen track waste heat drier. Fans driven by electricity furnish the needed circulation of air.

There are 13 30-foot round down-draft kilns. Coal is used

for the fuel. The plant has been electrified throughout. The water supply is obtained from springs and deep wells.

The Cleveland Plant

This was formerly owned and operated by the Metropolitan Paving Brick Co., and paving block was then its only product, but today under management of the Cleveland Builders, face brick and shale sewer brick are manufactured. About 70,000 daily.

The raw material is obtained from a 180-acre tract of ground which contains a rich shale deposit 80 feet in depth.

The shale, which is handled from bank to plant by means

features and while formerly the old plant produced one of the finest red brick manufactured anywhere in Ohio, the entire output of recent years has been on hollow building tile, 5x4x12 and 5x8x12.

The raw material is secured from a shale bank 15 feet above level of the plant. There are two steps, the faces carrying from six to 15 feet with a seam of stone dividing.

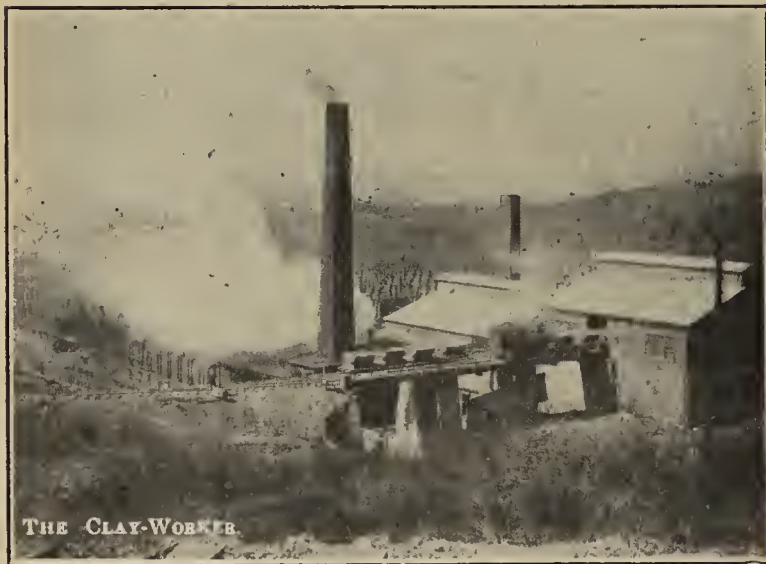
The shale is very hard and is blasted and loaded in 4-yard wood, steel bound dump cars by means of Thew steam shovel. The cars are hauled 500 feet to plant by a 3½-ton Plymouth locomotive. A large trestle has just been constructed and storage bins are to be built this winter which will hold about



Shale Bank of "Cleveland" Plant of C. B. S. & B. Co.



General View of "Cleveland" Plant.



Cars of Shale on Trestle, Near Storage Bin.



Kiln Yard of C. B. S. & B. Co. "Cleveland" Plant.

of a hoist and a small locomotive, is ground in dry pans, screened and worked through a Fate stiff mud machine.

The face brick are dried in a waste heat drier and burned in 11 down-draft periodical rectangular kilns, each 90 feet long. The finished product is taken in wheelbarrows from the kilns to the cars or wagons.

The "Hugo" plant, located at Hugo and Beyerle Roads, is used for the manufacture of concrete blocks and concrete roofing tile.

Plant of Independent Brick and Tile Co.

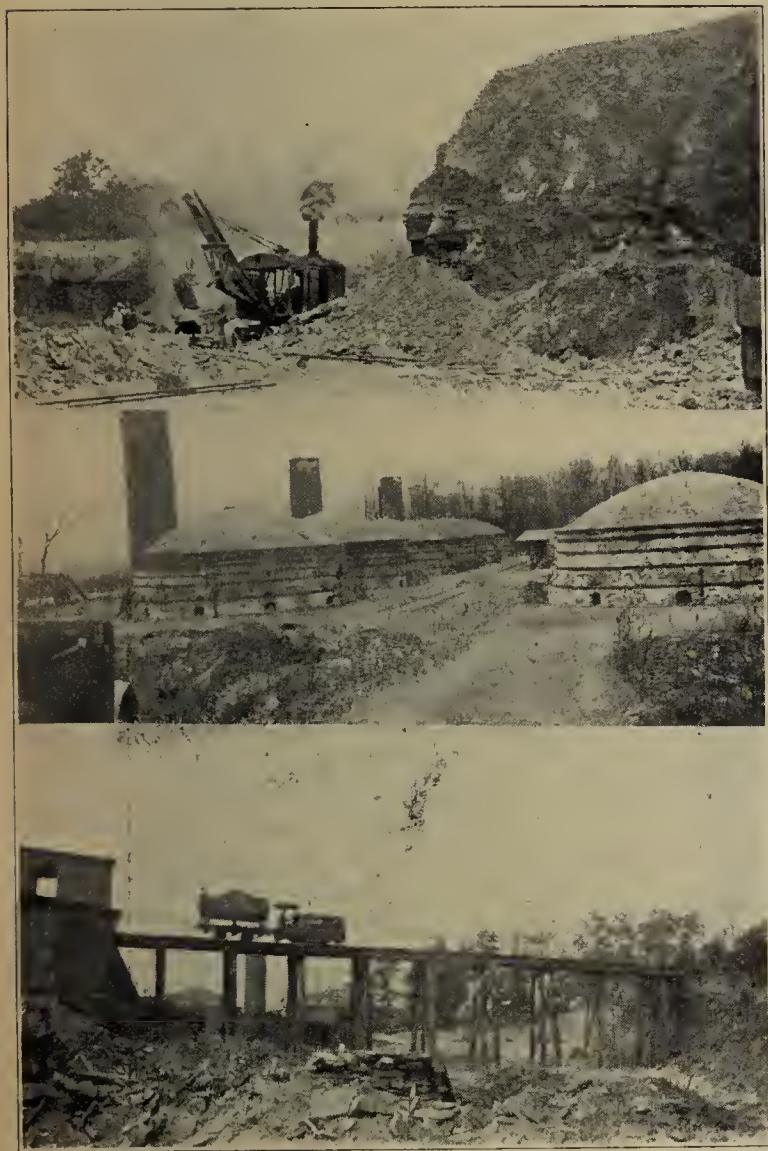
The above company purchased the old Murray Brick Co.'s plant in 1919 and revamped same. It has some very unique

three weeks' supply. The company operates the year round.

The shale is ground in 10 feet and 9 feet Stevenson dry pans. The elevating machinery is of the Louisville Machine Co. and Stevenson Co. make. The screens are of the company's own design. The screened material drops by gravity onto belt to storage bin and thence into an American clay feeder which feeds material into an American No. 312 pug-mill. An American No. 290 Auger machine and a Fate cutter completes the equipment. One hundred tons of hollow building tile are made daily, dried in a 12 tunnel American waste heat drier and burned in 10 kilns, 8 of which are 30 feet down-draft, while other two are 36 feet. Six more 36 feet kilns are to be built immediately.

The Boss forced air draft system is employed, the company expressing great satisfaction with same. An old kiln was left in the reconstruction for comparing difference with Boss method of burning and it has been found that the latter shortens the hours required, gives less wear and tear to the kilns, the brick above fire arches don't burn out as quickly, and slack and inferior grades of coal can be used to good advantage.

A Mathews gravity portable roller conveyor with quarter turn is used in unloading kilns. The carrier takes brick to a point 30 feet from kilns, where they go automatically onto a permanent belt conveyor 300 feet long running parallel with the battery of kilns and from this with a quarter turn are



Three Views In and About the Plant of the Independent Brick and Tile Co. Upper: Shale Bank. Center: Kiln Yard. Lower: Trestle From Bank to Plant Proper.

taken onto another belt 160 feet long to a point near the cars, where Mathews rolls take them around a corner and into the car.

The officers of the company are: Herbert F. Geist, President and General Manager; D. W. Teachout, Vice-President; William H. Thomas, Secretary, and A. J. Earl, Treasurer. The company has a display room in the Arcade Building.

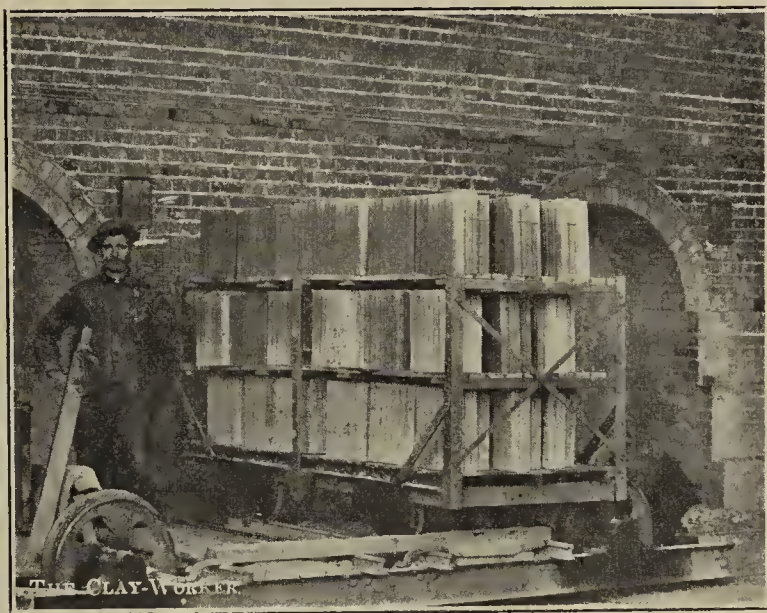
Plant of the Ohio Clay Company

One of the most progressive and up-to-the-minute plants in the Ohio district is that of the Ohio Clay Company, which is a large producer of Denison hollow building tile used for bearing walls, curtain walls, foundations and partitions in all classes of building, being particularly adapted for walls which

are to be covered with stucco or faced with brick. Walls made of this tile have great strength, are non-conductors of heat and cold and are moisture proof.

The plant is located six miles south of the square on the B. & O. Railroad, within trucking distance of the entire city of Cleveland and its environs. The company owns 70 acres of fine blue shale to the rear of the plant. The exposed face of the shale banks is 110 feet high. The lower 65 feet shale is removed by two Thew electric shovels, while the upper 45 foot stratum of material is obtained by use of an Eagle shale planer. At present they are using a Clark Tructractor for transporting shale from planer to edge of bank, where the material is dumped into a large pile under which is a tunnel with loose board arrangement. The dump cars are pushed into this tunnel and by removing the end board the shale drops into cars which, when loaded, are taken to plant by a Plymouth locomotive. This is a temporary arrangement for later a belt conveyor is to be installed that will carry the material direct from shale planer to the plant.

The shale is crushed in a Manufacturers' Equipment Co.'s single roll crusher under which is a large storage bin from



Atlas Electric Transfer Car on Ohio Clay Co.'s Plant.

which the crushed material is automatically fed to conveyer which discharges into a simple device which under the operation of one man will distribute the material to any one of three dry pans or to storage bin. The arrangement consists of gooseneck spouts and lever that directs the crushed shale through the spout to dry pan as desired. There are six spouts, one for each dry pan and three for surplus storage. The pans are of the Hadfield-Penfield Steel Co. make. The ground material is elevated to piano wire screens (3). A large storage bin catches the screened material from which it is fed as needed into a combination Fate pugmill and augur machine. A Robinson disc feeder is used in the automatic feeding of the material. A Chambers cutting table cuts 3,000 to 4,000 tons of tile a month and operates the year through. This cutter has given great satisfaction. Lakewood Engineering Co. drier cars are loaded with tile and taken by electric transfer to 20-track waste heat drier. The ware is dried 24 hours and then removed to continuous kilns of 14 chambers each, each holding 70 tons. These kilns are top slack fired compartment kilns wherein the ware is burned in five days. These kilns are located at either end of the plant with depressed tracks running the entire length on one side. All setting and emptying is done on this side. The stock yard is parallel to the

kilns. The plant is electrified, the power being purchased from the Cleveland Electric Illuminating Co.

There are two periodic kilns, one 32 round down-draft, the other a 50x18 rectangular kiln located between the compartment kilns and drier. Brown pyrometers are used.

The above described plant was the first tile plant to be built in the Cleveland territory and has been producing tile continuously for 20 years. It was the first plant in Cleveland to be electrified and has been the pioneer in adopting new methods and arrangements.

North of the present plant the company is constructing a second unit which will double the capacity of the plant, the raw material to be furnished from the main shale pit. A Harrop car tunnel kiln will be built 350 feet long. The grinding

into the general builders supply business and has established quite a reputation in this connection, having developed quite extensively this department of their business.

The plant operated by this concern is three-quarters of an hour auto ride which takes you through a beautiful park system over the Rockefeller Boulevard to and over a fine stretch of brick paved country roadway, to be exact eight miles north-east of the square. It is one of the best arranged and equipped plants in the Cleveland district, being clean and orderly and operated so smoothly that good production is always without question.

The shale pit is directly at the rear of the plant with over 80 feet face of raw material. There is a three-foot layer of surface clay and 80 feet of shale, which they are at present



Plant and Stock Yard of the Ohio Clay Co. Note the Large Continuous Kiln.

and molding and drying will be accomplished in similar manner as on present plant, but with some new improvements.

The officers of the company are: W. C. Denison, President; George W. Denison, Vice-President and General Manager, Assistant Secretary-Treasurer Leonard A. Denison, Assistant General Manager, and J. F. Pritchard, Assistant Secretary and Treasurer.

Plant of Collinwood Shale Brick and Supply Co.

The company has for its officers: Herbert C. Moatz, President and Treasurer; G. C. Gould, Vice-President; W. H. Cringle, Assistant Treasurer, and W. T. Holliday, Secretary. This organization is a new one, recently leasing the Collinwood plant of the Medal Paving Brick Co., for the production of its own paving material. This new management has entered

working. It has been estimated that there are from 700 to 800 feet of blue shale below the present workings. The bank is blasted, the bank being drilled from the top the full 83 feet. The drill hole, 4½-inch wide, is made by means of a cyclone drill of the Cyclone Drill Co., Orrville, O.

Cars holding 4 yards each are loaded and drawn up a steel incline by winding drum and cable. Sixty cars are used daily.

The raw material is dumped into a storage bin and fed into an American and a Bonnot dry pan by means of automatic conveyors in the bottom of the storage bin. Dodge Manufacturing Co.'s elevators elevate the ground material to two Bonnot piano wire screens. A Ceramic Engineering Co.'s automatic feeder feeds the screened shale from bin into a Bonnot pugmill. The pugged material drops into a Freese combined brick machine. A Freese automatic cutter for mak-

ing the Dunn wire cut brick is employed. The run is almost entirely 4 and 5-inch wire-cut-lug brick, 35,000 being made daily.

A few repressed blocks are made, one Bonnot and one Richardson repress doing this work.

The green ware is dried in a 14-track waste heat drier. An Atlas electric transfer car is used to splendid advantage. This transfer car is of two-car capacity.

The ware is burned in 18 round down-draft kilns, 17 of which are 20 feet, the other 30 feet. The brick are burned in 11½ days, coal being used as the fuel. The Price pyrometer

The Malvern plant was erected in 1887 by the Malvern Clay Company. It was the first plant on the Ohio River to make paving brick. It was remodelled in 1894; destroyed by fire in 1898, but was rebuilt and in operation fifty-eight days after the disaster. The late Charles J. Deckman, a former president of the N. B. M. A., was actively connected with the Malvern plant from the beginning. Charles J. Deckman, Jr., succeeded his father in the business.

Mr. Daniel Duty, who has been in the common brick business for a great many years, purchased the Collinwood plant in 1897 and began operating same in 1900. At his death, the



View of Collinwood Shale Brick & Supply Co.'s Plant, Showing Kiln Yard and Depressed Tracks.



Electric Transfer, With Two Cars of Dry Brick.



Shale Pit of Collinwood Shale Brick and Supply Co.

system records 10 kilns at a time, being connected to all kilns.

Depressed tracks on either side of the kiln yard facilitate the loading of the cars. The plant is electrified.

THE MEDAL PAVING BRICK COMPANY.

The Medal Paving Brick Company cannot be considered strictly a Cleveland clay manufacturing concern, as are the other firms mentioned in this article, for the Cleveland plant which they own has been leased, as stated above, to the Collinwood Shale Brick & Supply Company. However, they have splendid offices at 4900 Euclid Ave., and sell a great amount of face brick, tile and paving brick within the Cleveland territory.

In addition to the Cleveland plant, the company owns three other plants, one at Malvern, where only hollow tile is manufactured, one at Carrollton, where they make face brick, and a third at Wooster, which is given over exclusively to the manufacture of paving brick.

plant became the property of Spencer M. Duty.

In 1906 Mr. Deckman and Mr. Duty purchased the Carrollton plant which had been manufacturing pavers since 1892, and operated same under the firm name of the Deckman-Duty Brick Company. It was the relation growing out of this partnership which caused these two gentlemen to combine their interests in 1908, thus bringing all three plants under one management. The total output of these three plants when operated to capacity on paving brick was 35,000,000 annually. The brick for the first grouted brick pavement in 1885 were made at the Malvern plant.

The addition of the Wooster plant, together with the force and strength of W. R. Barnhart, Jr., formerly president of the Wooster Shale Brick Company, gave the company greater business stability and an immense output of high grade paving brick. Today, the Wooster plant only is being operated on



THE CLAY-WORKER.

Birds'eye View Hydraulic Press Brick Co.'s Plant.

paving brick by the Medal Paving Brick Company. The demand for tile and face brick caused them to change the production on the other two plants.

Spencer M. Duty, Charles J. Deckman, Jr., and W. R. Barnhart, Jr., the chief executives of the company, are progressive men who take an active interest in all Association work so they no doubt will be on hand convention week to welcome the delegates and renew old time acquaintances.

Plant of the Hydraulic Pressed Brick Company.

The Cleveland factory of the Hydraulic Pressed Brick Co., which is a large holding company with a score or more plants located throughout the Central States, is a most interesting plant.

Here they manufacture a high grade face brick exclusively, about 60,000 being produced daily through the year. Standards and special shapes are made. The company owns rich deposits of blue shale and red clay averaging 40 feet in depth. There is 20 feet of red clay and 20 feet of blue shale.

The materials are taken from the bank by means of steam shovel. The dry pans, screens and machinery are of the E. M. Freese Co. and Toronto Foundry and Machinery Co. makes.

The brick are dried in a waste heat drier (28 to 50 hours)



The Clay-Worker

Freese Cutter Used on Hydraulic Plant.



View of Plant of Superior Brick Co.

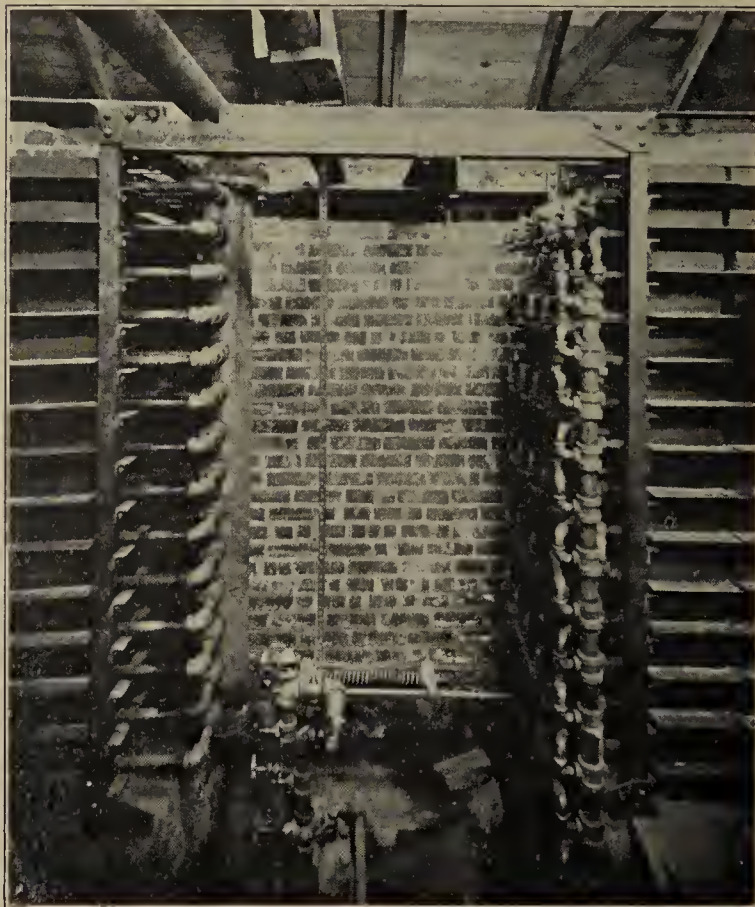
and burned in ten kilns of 125,000 brick capacity each. Eight days are required for the burning.

The wagons are backed into the kilns and loaded. The output is sold for the most part in Cleveland and Northern Ohio. The price obtained in Cleveland is from \$30 to \$35, depending on texture and shading of brick.

The general manager is A. S. Fielding, a progressive gentleman with wide experience in the brick game, who for 11 years previous to his taking up his present position two and one-half years ago, was sales manager of the Chicago office.

Plant of Superior Brick Co.

One of the plants which will be of especial interest to the visiting brick manufacturer during the next convention, is the



Feed and Drainage End of Dupuy Dryer on Superior Plant.

Superior Brick Company plant, which is located at Jennings and Bradley Road. The Superior Brick Company reports a very busy season with the demand far exceeding the output. The company has been making 50,000 per day for over two years and recently has installed a new dryer which makes their present output 100,000 per day.

The company has a fine deposit of blue and yellow clay which runs over 90 feet deep and with perfect drainage. This clay properly mixed burns a rich cherry color and produces an exceptionally strong brick.

The plant was built in a ravine scarcely large enough for the kiln shed, machine room and dryer, which makes the plant surrounded on three sides by a clay bank of 90 feet in height. The plant is equipped with a No. 1 Thew steam shovel for clay mining. The clay is carried from the steam shovel to the machine room in Atlas bottom dump cars of two-yard capacity.

The brick making equipment consists of two complete units of Auto Brik machines. Each unit is separately driven by electric motor of 100-H. P. to each unit.

From the bottom dump cars the clay is dumped into a large pugmill 42-in wide by 12 feet long which mixes the clay

is generated by three horizontal tubular boilers of 150-H. P. each. Oil is also used for fuel under the boiler.

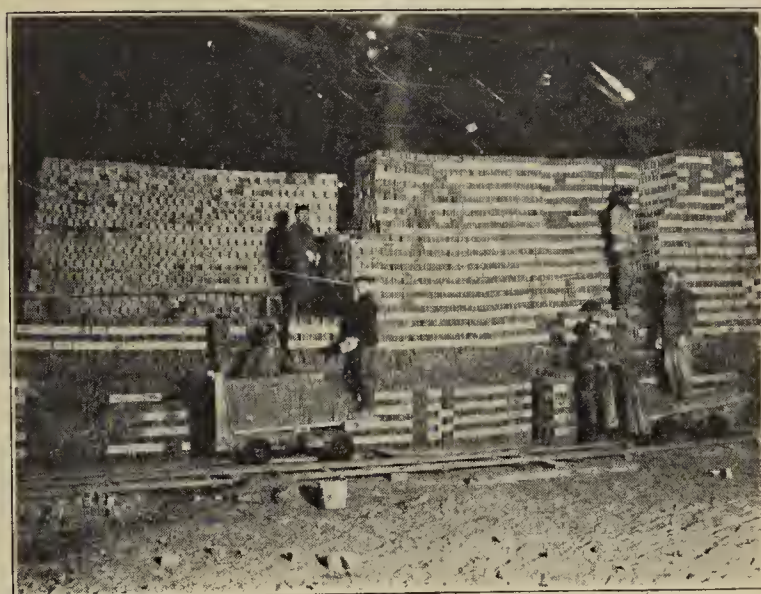
The Plant of The Cleveland Brick and Tile Co.

This company was incorporated in 1902, its present officers are: Robert L. Beck, President; Chas. C. Roehl, Vice-President; A. L. Hendershot, Secretary-Treasurer, and C. U. Hendershot, Superintendent.

The plant is located about four and one-half miles southwest of the public square. Paving brick is the chief product manufactured, approximately three million shale sewer brick are produced annually in addition to the paving brick. There is an unlimited amount of shale on their property. The raw material is obtained from a 100-ft. bank. There is no stripping. The shale is blasted and loaded into Lakewood cars by an electric shovel. The cars are then pulled up an eight per cent grade incline by a Plymouth gasoline locomotive to a Meco rock crusher which is fed by a reciprocating plate feeder. The crushed raw material is then elevated into the main building by a drag flight conveyor and dropped into bins from



Dupuy Rack Pipe Dryer and Cable Conveyor.



Setting Kiln of Brick on Superior Brick Plant.

and feeds it to the disintegrator. From the disintegrator the clay falls directly into the Auto Brik machine which automatically molds the brick and delivers same onto the cable conveyors. The drying is done in two separate units of rack pipe brick drier of 50,000 capacity to each unit at 6 bricks to each pallet. The first rack pipe drier was built over two years ago and was designed to use the Bishop & Babcock low pressure trap which is giving very practical results. The second drying unit was recently installed by Arthur O. Dupuy of Cleveland, Ohio, contractor in brick plant equipment. This last drying and conveying installation is highly recommended by the company.

The dried bricks are taken out of the drier on flat cars holding 500 brick and are transferred the full length of the kiln shed which is of the usual construction for scoved kiln. The transfer car used is driven by gasoline motor. The kilns are usually of twenty-five arches.

Bricks are set three on one as shown in one of the illustrations, the total height of 44 bricks by 36 in length making a total of about 25,000 to each arch.

Oil is used for burning the brick with steam pressure of 20 pounds for atomizing. Five days is the usual time required to burn a kiln. The steam for burning and drying the bricks

which the dry pans are fed by means of reciprocating plate feeders. Three 9-foot Bonnot pans are used.

The ground shale is elevated by steel incased elevators to Hummer screens furnished by the W. S. Tyler Co., after passing through screens the material is carried to a bin from which it passes on to Bonnot pug mill by means of Bonnot disc feeder. Bonnot brick machine is also used and a Freese cutting table. The plant produces 35,000 wire-cut blocks or 60,000 standard brick daily.

Lakewood drier cars are used, the ware is dried in an 18-track waste heat drier in 24 to 36 hours. The block and brick are burned in sixteen round down-draft 30-foot kilns. Ten to twelve days are required to complete the burn; coal is used as fuel. Depressed railroad tracks run through the kiln yard, affording excellent loading facilities for railroad shipments. The plant is operated by electricity.

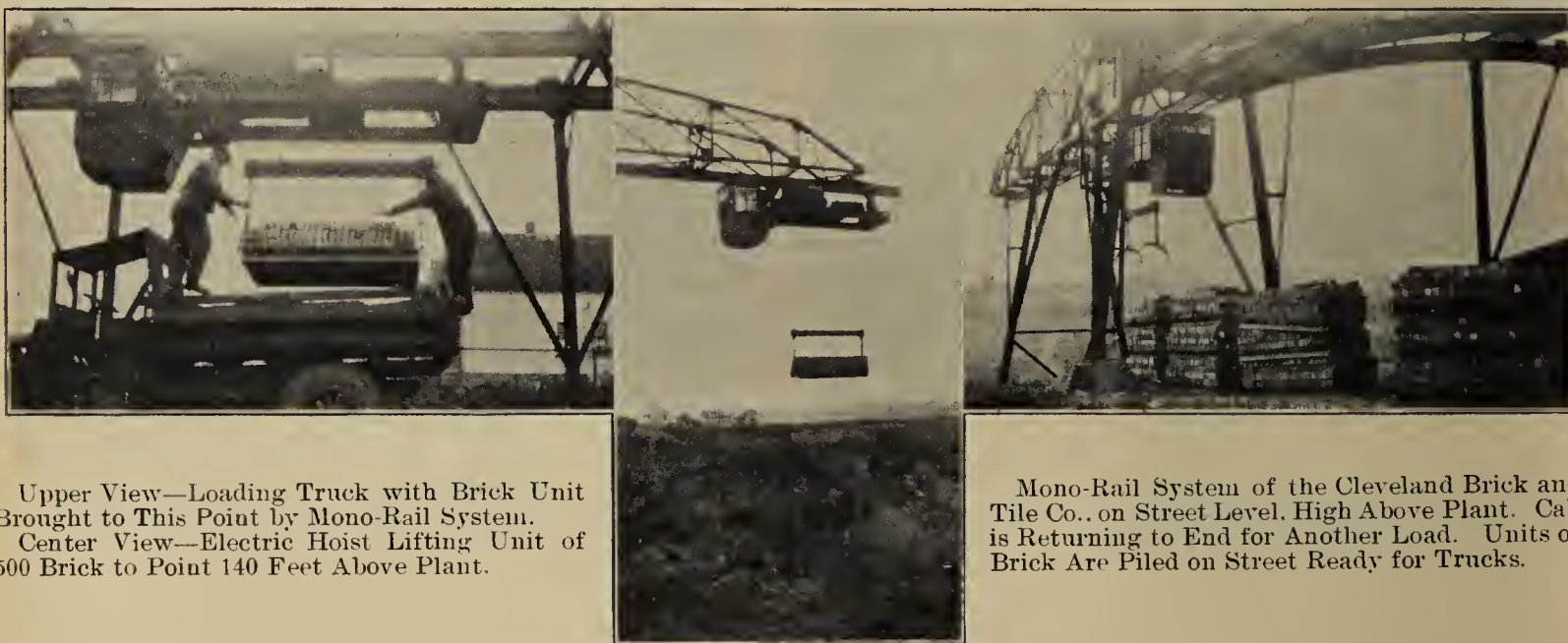
During the past year an electric hoist furnished by the Barber-Foster Engineering Co., of Cleveland, was installed which enables the handling of two to three tons of material in one operation, i. e. loading a truck with 1,000 paving block in seven minutes. The clay plant is 125 feet below the street level and to facilitate delivery this electric hoist was built at the end of the street pavement so that the units of brick

could be elevated from the lower level to the mono-rail system and along same to a point above trucks. This equipment proved very beneficial last fall, particularly during the car shortage when paving block and shale brick were trucked to a distance of from eight to ten miles.

A Clark Tractor with three two-ton trailers and one 1½-yard dump car are used about the yard in handling coal and brick.

NEW BRICK COMPANY IN CLEVELAND.

The McKay Brick Company recently incorporated with a capital stock of \$250,000, will shortly become an important factor in the Cleveland market, due to the high quality and variety in colors of the face brick they are now producing. This company has taken over the plant formerly operated by the John Kline Brick Company at Wickliffe, Ohio, which in years past produced an enormous amount of paving brick. The plant layout, the raw materials found in that immediate vicinity, and its close proximity to Cleveland, makes it ideal for the production of face brick as well as paving brick, sewer brick, and hollow tile, all of which the company intends to produce.



Upper View—Loading Truck with Brick Unit Brought to This Point by Mono-Rail System.

Center View—Electric Hoist Lifting Unit of 500 Brick to Point 140 Feet Above Plant.

Mono-Rail System of the Cleveland Brick and Tile Co., on Street Level, High Above Plant. Cab is Returning to End for Another Load. Units of Brick Are Piled on Street Ready for Trucks.

The plant has excellent shipping facilities with switches from both the Nickel Plate and New York Central railroads, as well as paved roads direct to plant on which trucks can carry the product to any point in the Cleveland territory with ease and speed, due to the level nature of the country. Mr. John F. McKay, president of the new company, was formerly connected with the Hydraulic Press Brick Co., as was also Mr. W. M. Arehart, who is the superintendent. The McKay Brick Company is at present represented in Detroit by Thomas Brothers, and in Dayton by Crume Brick Co.

BUREAU OF STANDARDS REPORT.

In a press bulletin annual report for the Bureau of Standards for 1922 it is pointed out that the year has been a remarkable one in the progress made toward squeezing waste out of industry. Incidentally the good work in connection with paving brick is referred to as a shining example of reducing useless variety and squeezing out waste in material and cost. The results of the Bureau's work are made available through its publications, of which 67 were issued during the fiscal year. These are all listed in circular 24 of the Bureau, together with abstracts which will en-

able anyone to select the papers they are particularly interested in. This circular may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

TO MANAGE FACE BRICK DEPARTMENT R. L. QUEISSER COMPANY.

Mr. Harold E. Dungan has been appointed manager face brick department, the R. L. Queisser Company, effective at once. Mr. Dungan was formerly with the Hydraulic Pressed Brick Company, coming to Cleveland after his return from service in France. Mr. Dungan went to France with the very first of the A. E. F. and was immediately assigned to the French Aero Squadrons for service; later he was attached to the American Pursuit Group of service on the front from April to October, 1918, when he was wounded. After convalescing he served in Germany with the American Army of Occupation. He served at the battles of Marne, St. Mihiel and Meuse Argonne; was awarded the Croix de Guerre by the French Government, and the Distinguished Service Medal from the American Government. During his stay in Cleve-

land he has made an enviable record as a brick salesman, and by his genial presence and personality has made a remarkably good impression on the trade.

The R. L. Queisser Company has a good display in their offices on the eleventh floor of the Schofield Building, Cleveland. They handle brick of all kind, maintaining five grades of fire brick, stock twenty varieties of face brick, from white Kittanning, both smooth and rough, to various mingles of all kinds, both smooth and rough, including Harvards and Cloisters. In all they carry ninety different types and varieties of brick. Their yard is located at 9005 Woodland Avenue and Nickel Plate Railroad. They truck to Alliance, Canal Dover, and all territory within a radius of sixty miles of Cleveland. They carry from 600,000 to 700,000 brick in stock at all times, and eight to nine trucks are employed every day to make deliveries.

Some wag has figured it out that if he could save all the fuel promised by all the different methods and devices he could by putting them all in have extra coal to sell without having to buy any at all himself. He would be in the shape of the flivver owner who put on so many gas saving devices that he had to stop every few miles and bail out a lot of accumulated gas.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,437,867. Building Bricks. Emil C. Sista, Cleveland, Ohio., patentee.

A building block having spaced hook shaped projections on its under side extending in a common direction from one edge toward the other.

No. 1,438,599. Refractory Ware. Joseph A. Jeffery, Detroit, Mich., patentee.

The raw batch of a refractory ware comprising highly refractory granular material and a clay having the characteristics of Edgars' plastic kaolin.

No. 1,438,588. Treatment of Clay. William Feldenheimer, London, England, patentee.

The process for the treatment of clay which comprises effecting deflocculation of the clay substance by mixing the clay with a dilute aqueous solution containing a soluble pyrogenic derivative of orthophosphoric acid.

No. 1,438,340. Brick Wall Construction. Thomas Siderits, Milwaukee, Wis., patentee.

A wall construction, comprising rows of spaced blocks separated by rows of bonding blocks, and a projection on each bonding block of a width substantially equal to the space between the first named blocks and against which the inner faces of the same engage whereby said first named blocks are maintained in proper spaced relation.

No. 1,440,105. Brick Mold. Richard Roiderer, Cleveland, Ohio, patentee.

A brick mold of the character described comprising a supporting tray with upstanding portions along its edges, plates having upstanding ends and so placed on the supporting tray that the upstanding portions of the tray will provide sides for the plates and a strip placed between rows of these plates for the purpose herein described.

No. 1,438,407. Drawing Apparatus for Kilns. William S. Speed, Louisville, Ky., patentee.

A continuous drawing apparatus for kilns having a discharge opening in the base thereof, comprising a reciprocating table or platform disposed below said opening, upright pivotal supports disposed below the platform and connected therewith, and means for imparting back and forth movement to the platform, said platform having a discharging chute, and an endless conveyor arranged below, whereby to receive and transport the material discharged from said chute.

No. 1,438,799. Encrusted Metal Design on Ceramic Substances. Edmondson Warrin, Upper Montclair, N. J., patentee.

A process of decorating china, glass and other ceramic articles with metallic substances which includes the printing with acid resisting printing fluid, the design desired to be decorated upon the article, covering the portion of the article not desired to be decorated with an acid resisting compound paste, placing the article in a hydrofluoric acid solution, letting the acid eat into the uncovered surface of the article a predetermined depth, filling the eaten portion with a silver solution, fusing the solution to the article, cleaning the fused silver for electroplating, electroplating copper thereon, and electroplating gold on the copper.

No. 1,437,769. Duplex Tunnel Kiln. Paul A. Meehan, Cleveland, Ohio, patentee. Patent assigned to American Dressler Tunnel Kilns, Inc., New York, N. Y.

The combination in a duplex kiln comprising an elongated kiln chamber provided with two lines of tracks, of two oppositely moving trains of cars in the kiln for carrying goods therethrough, one train running on each line of track and each car having a goods carrying platform with the platforms of the cars of one train separated from the platforms of the cars on the other track by a narrow clearance space, means supplying heat to the portion of the kiln chamber above said clearance space, trough parts carried by the cars of one train and

flange parts carried by the cars of the other train dipping into said trough parts and co-operating therewith, to provide a seal against a circulation of the kiln atmosphere through said space.

No. 1,439,410. Refractory Material and Furnace Wall Thereof. James H. Gray, New York, N. Y., patentee.

A furnace wall comprising a body of carbonaceous material and an inside exposed facing of another refractory material which has a higher resistance to oxidation.

No. 1,438,587. Treatment of Clay and Product Thereof. William Feldenheimer, London, England, patentee.

The process for the treatment of clay which consists in suspending the clay in water by the aid of a deflocculator and evaporating the clay suspension containing substantially all the deflocculator employed to substantial dryness.

No. 1,439,446. Brick. Joseph Regan, Rockville, Conn., patentee.

A building brick of rectangular form having six flat faces, the bottom face being provided with a plurality of substantially parallel ribs extending longitudinally of the brick, terminating short of opposite ends thereof and extending equally at opposite sides of the transverse middle of the brick.

No. 1,438,679. Method of Laying Brick. Charles E. Avan, Los Angeles, Cal., patentee. Patent assigned to Jesse Martin, Jr., San Francisco, Cal.

A structure adapted for use as a fire box comprising a metallic housing; a brick lining for said housing, a stiff plastic clay backing material between said brick and said housing and a fluid plastic clay jointing material between said brick.

No. 1,439,632. Arch Brick. Charles E. Miller, Chicago, Ill., patentee.

An arch brick having an arcuate lower surface, the ends of the arc terminating at a point materially removed from the ends of the brick, a curved groove at the ends of the brick for engagement with an arch tube, and an upwardly extending surface connecting the ends of the arc with the arch tube grooves.

No. 1,440,218. Means for Reinforcing Refractory Material. William B. French, Guthrie, Ky., patentee.

A reinforcing means for refractory material, consisting of a metal frame or grid composed of similar looped-shaped members interlocking at their points of intersection and disposed to provide a rectangular shaped structure, said loop-shaped members being intertwined to form a flat grid and having their free ends formed with hooks to secure said loop-shaped members.

No. 1,438,598. Ceramic Insulating Material. Joseph A. Jeffery, Detroit, Mich., patentee. Patent assigned to Jeffery-Dewitt Co., Detroit, Mich.

The raw batch of a ceramic insulating material comprising a calcined mixture of clay, alumina and an alkaline earth metal compound mixed with raw clay, the clay of the calcine maturing at the temperature of the formation of sillimanite, the raw clay content when heated by itself maturing at the temperature at which the ceramic body matures.

No. 1,439,103. Heating Device for Kilns. Guy C. Heilman, Philadelphia, Pa., patentee.

A heating device comprising a combustion flue having at one end an air-inlet contracted toward the opposite end, and a fuel inlet between the contracted discharge end of said air inlet and the outlet of the flue, the cross section of the flue first increasing between said fuel inlet and the outlet, then being uniform for a certain distance, and then again increasing toward said outlet.

No. 1,439,286. Bonded Alumina Refractories.—Milton F. Beecher, Worcester, Mass., patentee.

A refractory article comprising crystalline alumina grains containing slag and oxidation impurities integrally united by a vitrified ball clay material in which the grains are substantially in contact and shrinkage during drying and firing of the article is minimized, said article having been fired above cone 12 and the normal vitrifying temperature of the bond until any permanent volume change due to expansion in the grains or the bond has been substantially completed.

Making a temporary hobby of thrift helps some, but the right idea is to make it into a regular habit.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter One.

The Meaning of Cost Keeping and Its Need.



HERE IS PROBABLY no other phase of business management today the importance of which has been emphasized as much in recent years as that of cost keeping. Governmental agencies, chambers of commerce and trade associations have taken up the subject. They are unanimous in their recommendations to various industries that cost keeping be included permanently in the management. However, in the case of clayworkers, it is not so easy for a national association to undertake this work. Clayworkers throughout the country have not enough in common for their national associations to be able to deal effectively with the matter. Other groups, such as the National Fruit Growers' Association, market their products as a body, and this fact binds the various members together far more than any tie that holds the Clayworkers.

These manufacturers are interested in seeing their competition put on a fair and intelligent basis. It is the hope of accomplishing this end more than anything else that stirred The Clay-Worker to undertake this campaign.

Definition of Costs.

In arriving at a definition of cost keeping it is well to make clear the distinction between it and general accounting with which it is often confused. General accounting determines the profit and loss on the entire business. It also furnishes the balance sheet which shows the assets and liabilities of the business. It secures its information from the items posted by the bookkeeper who makes a record of the various business transactions, which, when properly grouped and totalled furnish the accountant with his information. For this reason, all general accounting is exactly the same and all bookkeeping is fundamentally the same. The general accounts should show the total of all labor and all materials which have been purchased and also all records of sales without regard to the details as to how these receipts or payments were brought about. These totals should be accurate, because they represent the requisitions, payrolls, sales orders, and other documents of similar nature. These general or controlling accounts show whether or not the business is making money, but they are unable to show where the trouble lies in case the business is failing. They also indicate whether the total prices asked are enough to cover the total cost of production and insure a profit, but they do not show the profit on any particular line or class of article. They do not show where the money is going. They do not show how much to charge for each class of work in order to make that particular class pay for itself.

Bookkeeping is recording the day's transactions that make up the totals mentioned above. In other words, the accountant summarizes the bookkeeper's daily work and deduces

from it the total loss or the total profit on the business over a given period of time, usually a year. The total accounts are referred to as controlling accounts because they offer a check on the detailed entries which the bookkeeper makes. But neither the bookkeeper's nor the accountant's work brings out any detailed information as to the expense per job or the actual cost of production.

Difference Between Costs and Accounting.

It is clear, then, that the main distinction between cost keeping and general accounting is this: General accounting reflects the business as a whole; cost keeping shows the details of production. It determines the profit and loss of each unit. It also shows how much to charge for each unit in order to make a profit on it. It distinguishes between overhead expense and expense that may be charged directly to a job. It analyzes the cost of every job and the cost of every article made. Cost keeping makes a comparison between present and past performance. It sets definite limits on overhead expense and warns the manager when the danger line is being approached. It indicates the general policy that a business must follow. It points out whether it would pay to expand the business by increasing the value of work done or to contract the business by taking fewer jobs. It points out currently when costs and expenses are running too high. When retrenchment is necessary, it shows just where and how much to cut. In this way, it is an active aid to the management and not merely a history of past performance to gaze at a year after the work is done.

The Nature of Cost Work.

From the above it can readily be seen that while bookkeeping and accounting are functions of the office man and the regular clerical force, cost keeping is primarily a shop function. It must be conducted by someone who is thoroughly familiar with the practical conditions of the shop, since it deals more with the details of production, that is, the practical or engineering work the shop does, than with the clerical work. As a matter of fact, cost keeping records can be devised that require little clerical effort. But they do require a very thorough and complete knowledge of the type of work done in the factory. Of course, it is necessary to get the results of the cost keeping into the general books. This can be done very simply through the medium of several controlling accounts, that is, each of a general group making up shop costs represented by an account in the general ledger.

For example, all labor payrolls are summarized in one account in the general ledger; all material expenditures would have another account; overhead expenses would have still another, and so on.

Functions of Cost.

The function in cost keeping is to tell how much to charge in order to make a profit. This is done by considering the

various elements of costs, namely; labor, material and overhead. The cost records are based on these three elements. They call attention at once when any or all of them are being drawn on in excess of their budget limits. Cost keeping determines the percentage of overhead. It fixes an administrative and selling expense charge. It points out the lines that are profitable and those that are not. It determines with scientific accuracy how low a man may fix his price and still make a profit or avoid a loss. It tells just where the money goes and where the leaks are. In other words, it is the measure of the business. No clayworker is safe without some practical cost keeping system in operation.

Problems of Cost Keeping.

Undoubtedly one of the reasons why cost keeping has not made greater progress among the industrial groups of the United States is the fact that cost keeping itself is beset by problems that do not appear in accounting, bookkeeping, or even in general engineering. There are many points that are debated even among cost engineers. This is largely due to the fact that each industrial group contributes its share of complications and problems. In order to install a cost system successfully in the brick industry, one has to pay special attention to clayworking conditions and ignore experience obtained in other fields.

One of the problems that has been of special interest is that which has to do with the proper application of overhead. One group wishes to apply overhead on the basis of cost of labor and material. This practice is known among cost engineers as the blanket rate method. Still another group wishes to apply overhead on the basis of direct labor costs, and a third on the basis of direct labor hours. All of these groups have their arguments and their experiences to justify their position.

Another problem presented to cost engineers is that of finding the proper basis on which to figure the cost. In the case of a continuous process industry, such as brick manufacturing, the cost is naturally based on the number of bricks produced. In the case of an automobile factory, the cost is based upon the department and the machines used in the department.

Interest on invested capital is another controversial point. The Federal Government does not permit a company to charge interest as part of the cost, but the question of whether interest on the invested capital should be included in the cost when fixing the price or not, has been debated for a great many years by bankers, cost engineers, manufacturers, and business men in general. One group wishes to exclude interest from the cost. Another wishes to include it, saying that it is a legitimate part of the cost, just as much as light, power, etc. The question of interest will be taken up in its proper place, and it is hoped that the solution offered will be satisfactory.

Still another source of trouble among manufacturers are the methods used to add the price to the cost of production. It is customary for a man to add up his labor, material, and overhead expenses and then add 20 per cent to that sum for

profit. Most manufacturers planning the year's business, have figured 20 per cent profit on the total volume of business. It is easy to see that if the 20 per cent is added to the cost of production and not to the sales price as a whole he would suffer a loss and not know it. For example, he may wish to add 20 per cent profit on a job costing \$100.00. Now, if he takes 20 per cent on \$100.00 the profit will be \$20.00, but it wouldn't be 20 per cent of the sales price. Twenty per cent of the sales price would be \$25.00. If a man wishes to add 20 per cent profit to the cost of his production, he must consider the cost of production as 80 per cent of the selling price and add one-quarter of the cost to get the total selling price.

The Importance of Professional Assistance.

Another big difficulty in the cost-keeping field is the fact that the average business man thinks he knows enough about cost keeping to set up a system himself. This is a very queer idea and has no foundation in fact. A man may use his automobile every day of his life, but that does not mean he knows how the works should be built or that he himself can construct them. A cost system is a mechanism that is beset by many problems and it takes a skilled man who has devoted his entire time to a study of the subject to be able to produce one that will work in a practical way. A good many men go through the motions of using a cost system because they have heard or read that such a thing is good business practice, but actually they use their own heads and rely entirely on their memory to supply them with facts. It would be better for a man who develops a system of this sort not to have one at all.

A much simpler way would be to take professional advice from the cost engineer. The cost engineer has put in a great many systems, has read every worth-while book on the subject, and is thoroughly familiar with the theory and practice of costs. Not only that, but he knows how to install a cost system with minimum effort. He knows the pitfalls that should be avoided. Any man who maintains a poorly devised system risks a loss. To eliminate this risk, it is worth while going after professional advice to insure the proper start to the management.

Answers to Criticisms of Cost Keeping.

It is necessary now to answer some of the criticisms made of cost systems. The most frequent objection met with in attempting to sell cost systems to individuals or organizations is the one which admits the usefulness of a cost system but claims that special conditions in clayworking would prevent the successful application of such a system. It would be strange indeed not to hear a man say, "I would like to do the work in the way you suggest, but my business is different."

As a matter of fact, it is that very difference and uniqueness of the business which furnishes the strongest argument of all for standardized cost methods. If all businesses were alike it would be a matter of a few short weeks before a cost

(Continued on Page 70)

This is the first of a specially prepared series of Thirteen Chapters, covering thoroughly in a most practical way, the subject of Cost Accounting for medium size plants. The industry as a whole will be greatly benefited if the individual plant owners will study the proposition and adopt the suggestions made, for then, every one will know the actual cost of his product. Standardized Costs for Clayworkers is written by a man identified with the brick business, who knows cost accounting from A to Z. He will answer through The Clay-Worker any question our readers may ask, relative to the subject.



COLORATION, DISCOLORATION, AND OTHER BURNING EFFECTS.

By Ellis Lovejoy, E. M.

There are many burning effects, intentional and otherwise, concerning which frequent inquiries are received, and a discussion of a few of the more common ones may be pertinent.

Scum.

The almost universal bug-bear of the clay-worker is scum. It comes up again and again as a kiln trouble because it becomes apparent in the kiln, and we have made many investigations of it. It is chiefly a dryer trouble which has been discussed in "Scumming and Efflorescence" by the author and there are several available published articles relative to it.

The ordinary scum is a dirty white coating which comes to the surface of the ware in the drying and becomes permanent in the burning. Where such trouble occurs the first step should be to determine whether it originates in the dryer or in the kiln. If the product is brick, a brief study of the scummed cross bars on the faces and backs of the bricks, corresponding to the setting, will determine the origin of the trouble. If these marks correspond with the setting on the dryer cars and not with the kiln setting, the trouble goes back to the dryer with which we are not concerned in the burning.

The examination of the burned product in the kiln frequently reveals that the coating occurs in both dryer and kiln, but occasionally it is clearly a kiln trouble.

In the majority of instances the scumming minerals are in the clay or shale and the water used in pugging.

The common scum is sulphate of lime (gypsum). Operators have often observed glassy plates in the clay or shale which to them "looked like isinglass" but instead these crystal plates are gypsum, and the proof is that they can be scratched by one's finger nail. Ground waters almost invariably carry some sulphate of lime which produces a tough adhesive scale in steam boilers.

If a careful investigation were made it is doubtful if there will be found one shale out of every hundred that is free from gypsum. If the scum minerals are so universal it may be asked why it is that many clays and shales in use do not scum, or at most only occasionally.

The explanation is that the clay mass absorbs more or less of the salts of whatever kind and in drying, these absorbed salts do not come to the surface. The surface scum is the excess salts in the clay mass.

The elements of scum are therefore usually found in the clay or water, or both. It may be present in neither in sufficient quantity to cause surface scum, but the base element may be in the clay and the acid element in the water, or vice versa, and when the two are brought together an excess of scum mineral may be developed.

Scum often develops in the dryer when combustion gases either direct or by leakage, get into the dryer. The shale or clay may contain lime insoluble in water—lime carbonate, for instance—and this is converted into sulphate by sulphur gases in a humid atmosphere in contact with the drying ware. If the ware is not scummed in the dryer, but does scum in the kiln, the investigator should determine whether the effect is not due to setting wet ware. If the kiln fuel is coal, we get sulphur gases from it and if the ware is set wet, we get the dryer conditions above mentioned, and the correction is evident.

It may be asked how sulphur gas and water vapor, essentially a gas, in the kiln among the ware but not within the ware, can penetrate the ware, disintegrate the lime minerals and dissolve the lime and subsequently come to the surface in a liquid form, which it must do to bring the dissolved salts to the surface? Sulphuric acid forms when sulphur dioxide and water vapor are mixed or when the dioxide is brought in contact with a damp surface. It volatilizes at a much higher temperature than water, and although water vapor may be leaving the ware, any sulphuric acid developed is being absorbed by the ware and it with any dissolved salts are brought to the surface later in the water-smoking period.

In this connection, but aside from the subject under discussion, we may mention a sulphur gas trouble which was experienced by a number of the early users of continuous kilns, before advanced heating flues were adopted.

The ware when burned to vitrification, or approaching vitrification, was swelled,—not bloated as we understand bloating,—yet perfect in shape but a larger size than the same ware burned in periodic kilns. The soft burned ware was normal in size but the hard burned product often was larger than the dry ware although the normal burning shrinkage should have been six or more per cent.

In such kilns we had not only the sulphur from the fuel but often a far greater volume of sulphur gas from the shale or clay and these gases were going forward into low temperature water-smoking compartments. The conditions for the development of sulphuric acid were ideal, and the effect on the product was as noted above.

No satisfactory explanation of this has ever been made, so far as we know. Undoubtedly mineral sulphates were developed in the ware which had little or no effect upon the soft burned ware, and it is likely that at vitrifying temperatures, the sulphates were dissociated, and likely we got a result similar to black coring and bloating with which all clayworkers are familiar, yet apparently there was no visible vesicular structure such as we get in bloated ware. Incidentally it may be mentioned that clays containing lime pebbles are often burned in continuous kilns and the burned product does not "pop," as it does when burned in periodic kilns.

Returning to the subject of scumming, it is evident that

the ordinary scum develops in the dryer, and if the ware is properly dried and not scummed, it will not scum in the kiln.

Two rare discolorations have come to our attention,—one of them in several operations and the other in a single instance. The former is an evanescent white coating which appears on the surface of the bricks,—even vitrified bricks,—after they are burned. When the kiln is first opened and still hot, the ware is clean but as cooling proceeds the white coating appears. In one instance the bricks were clean when taken from the kiln but became heavily coated shortly after, without moisture except such dampness as they might gather from the atmosphere during a summer day. An analysis of this coating showed it to be an alkaline sulphate,—an alum if you please, but it is not fully clear to us how this coating develops.

In three instances we found that the trouble appeared when the bricks has been burned with wet dirty coal from an old mine. In two of these instances we suggested that clean, freshly mined coal be tried and the result was that the trouble was overcome. One operator after getting clean ware from good coal, went back to the cheaper coal which he got from a near by old mine, and the efflorescence reappeared. In one operation the product was a vitrified flashed brick and it is inconceivable that the efflorescence could have come from within the product, especially in view of the fact that there is no moisture except atmospheric vapor.

Evidently the alkaline sulphate is a surface coating and it seems to us that it must come from the coal ash.

Its visibility and evanescence are due to the action of ammonia in the atmosphere, the effect of which is to produce a white efflorescence on the alkaline sulphate.

There likely is present in the surface of the ware an invisible crystalline alkaline sulphate which when acted upon by ammonia produces a white flocculent ammonia alum, and this is the white coating which appears under the conditions given above. It is very soluble and quickly disappears in the presence of excess moisture.

In this connection we may mention a vitrified flashed brick product which does not effloresce in the wall, but in two jobs effloresced badly, and these two jobs were ice manufacturing plants. This efflorescence, it seems to us, is analogous to the above described phenomenon, because of the ammonia vapor in the ice factories.

The white coating which we have described and which is due to a condition developed in the kiln, must not be confused with the white, yellow and green coatings which appear on wares on the yard and often after the product is laid in the wall. These are quite another story which goes back to the clays when the coatings are developed from the product and not from extraneous sources, nor are these efflorescences related to scumming, at least not closely related.

The other unusual coating mentioned previously had all the appearance of common ordinary scum. An examination of the bricks in the kiln showed masses of the ware badly scummed and the scum flared out on the sides of the bricks where the gases came up through the checker work and the white cross bars on the backs of the bricks corresponded to the kiln setting.

It was clearly a case of kiln scumming. The product from the dryer was clean in spite of the fact that the drying was done with combustion gases from the boilers and gas from the producers from which gas was also drawn to burn the kilns. This was the puzzling problem. If the combustion gases would not scum the product in drying why should they develop scumming in the kiln work? A mineralogical examination by an authority in this work revealed that the coating was almost entirely silica,—just white sand. If this is correct

the explanation is simple. The bricks were closely set in an updraft kiln and platted with a tight flat course instead of the usual spaced course covered by a tight course, and the openings were small and far apart instead of the customary opening of each alternate brick in the tight course. The result was that the bricks, especially in the patches where the draft was sluggish, were steamed in conjunction with sulphur gases.

Any chemist is familiar with the rational analysis of clays by which practically all the minerals in the clay except free silica are dissolved by hot sulphuric acid. This, it seems to us, is what happened in the above described kiln operation. The surface minerals except sand were dissolved and carried into the bricks and the final evaporation took place below the surface, or at least under the sand, leaving the latter as a dirty white coating.

Manufacturers of clay wares are familiar with a number of discolorations in consequence of steaming in a sulphur acid atmosphere.

In the manufacture of gray bricks using manganese for the gray color, light edges bordered by a streak darker than the normal color of the brick, were frequently, and on some yards invariably produced, when water-smoking with coal or coke.

We have had similar experience with light red bricks especially when burning the product in continuous kilns without advanced heating flues and occasionally in down draft kilns when the draft was sluggish, or the kiln bottom became choked by soot or crushing of the bottom courses.

We have often seen buff bricks badly streaked and coated with red,—the sides and cross bars of the setting and any part of the product from which the final evaporation took place.

Fire-proofing from buff burning clays when set on solid kiln bottoms often develop a reddish color in the bottom tiles.

All of these effects are produced by sulphur gas and moisture. The reddish colors in the buff burning product is due to the disintegration and solution of the iron minerals by the sulphuric acid and the iron stain is left as a red oxide coating on the surface of the ware or within the ware as the final evaporation of the acid moisture takes place from the surface or below the surface. The streaked edges in the gray bricks were due to the solution of the manganese which was taken into the bricks and finally left as a streak at a depth below the surface where the moisture was converted into vapor.

Many discolorations are due to sulphur gases and condensation on the ware in the colder parts of the kiln, and improvement, if not complete correction will come from slower water-smoking, better circulation, more open kiln bottoms, and stronger draft.

(To Be Continued)

A BUCKEYE WELCOME FOR ALL WHO ATTEND THE CLEVELAND CONVENTIONS.

Delegates to the N. B. M. A. convention at Cleveland desiring information relative to the Haigh Continuous Kiln, and the full line of "Built Right, Run Right" clayworking machinery will find what they are looking for at the headquarters of the Hadfield-Penfield Steel Company, formerly the American Clay Machinery Company, Room 219, 221, 223, 244 and 248, Hotel Winton. The aforesaid line of equipment is fully illustrated on pages 57 to 63 of this issue. A corps of expert trade "missionaries" will extend the glad hand to all visitors and dispense trade information freely to all comers.

WHAT OF 1923?

The following letters from representative men in the industry, covering almost every section of the country, show that a very optimistic spirit prevails throughout the clay trade. Space will not permit of the publication at this time of the scores of other letters we have received, some of which will appear in a subsequent issue.

OUTLOOK FAVORABLE.

"Henry C. Bach, Pres. Bach Brick Co., Chicago, Ill.—"The present outlook for the common brick business is favorable. We do not look for a material change in market prices. The prevailing price on common brick at yard is \$10.50, and delivered \$12.00 per thousand. We are not thinking of enlarging our plant, but we make improvements as we go along. There are no new plants being built in this vicinity."

A GREAT DEMAND IN 1923.

"D. T. Bunting, Gen'l. Mgr. Bloomfield Brick Company, Bloomfield, Indiana.—"It is our belief that there will be a greater demand for brick during 1923 than there has been during 1922. In our opinion, there will be some slight increases in the price of face brick, but we do not believe the increase will be materially great. At the present time, we are making quite a few additions to our plant, such as building a new brick barn, and reconstructing the buildings housing our machinery. We propose to operate continuously during the entire winter."

BRICK BUSINESS EXCELLENT AT HOPE, ARKANSAS.

"N. P. O'Neal, Hope Brick Works, Hope, Arkansas.—"The present outlook for the brick business in our section is excellent. We now have orders on our book for practically all the brick we will be able to supply until April 1st. The price of brick will probably go up slightly. It is now \$10.00 per thousand f. o. b. cars at the plant for all hard burned brick. Four-inch drain tile are now \$30.00 per thousand f. o. b. cars at the plant. We are not figuring to enlarge our plant at this time and there are no new plants being built near us."

BUSINESS BOOMING IN LOUISVILLE.

"James T. Howington, Gen'l. Mgr. Coral Ridge Clay Products Co., Louisville, Ky.—"The present outlook for brick and tile business, is very good in our section. We entered the New Year with something more than three months business on our books, and with the finest list of prospective jobs we have ever known at this time of the year. We do not look for any change in market prices, unless there is a coal strike April 1st. We held prices down last year, and suffered considerable losses when coal prices ran wild. In 1923 we will continue to hold prices down as long as we can stand it. The prevailing prices delivered at the building site in Louisville, are common brick, \$20.00 per thousand; face brick, \$32.00 per thousand; hollow building tile, forty off list, which means \$214.70 per thousand, on 8x12x12 load bearing tile."

UNPRECEDENTED BUSINESS.

A. B. Adams, General Manager, Key-James Brick Company, Chattanooga, Tenn.—"All indications point to an unprecedented business throughout the South in 1923. It is our opinion that demand for materials will be great and that ability of producers and manufacturers to supply requirements of the trade will be measured by ability of transportation companies to furnish necessary equipment."

"Key-James Brick Company, of Chattanooga, is installing new machinery, improving its methods and making arrangements to be ready to handle what we anticipate will be the greatest year's business in our history."

"The dark spot on the horizon is the prospective nation-

wide coal strike of next spring. In the opinion of leading operators of the central coal producing states, a strike is inevitable. This will have a deterrent effect on what would otherwise be a record year for business."

1923 TO BE BETTER THAN 1922 IN ALABAMA.

"J. M. Jenkins, Jr., Pres. Jenkins Brick Co., Montgomery, Ala.—"We consider the present outlook for 1923 favorable, indications being better than a year ago. We do not look for any material change in the market prices. The following prices are an average for this immediate vicinity: Common brick, \$9.00 to \$10.00 per thousand; 4-inch drain tile, \$28.00 per thousand feet; 8x12x12 tile, 6-cell, \$153.90 per thousand."

"We do not contemplate any changes at our plant for the immediate future. We know no new plants being erected. The Excelsior Brick Company, of this city, are rebuilding their plant recently destroyed by fire."

EXPECT FAVORABLE BUILDING CONDITIONS.

"O. Zimbal, Pres. O. Zimbal Brick Company, Sheboygan, Wis.—"Building conditions in this section of the country have been very favorable during the past year and undoubtedly it will be the same for 1923, but drain tile has been just the opposite as the farmers are not buying anything beyond their actual needs. Our plant was run about one and one-half million brick short of capacity during the past season due to the coal situation and labor shortage. Common brick are now selling for an average price of \$17.00 per thousand delivered to the job, face brick from \$30.00 to \$44.00 per thousand and 4-inch drain tile, \$35.00. We do not look for any reductions in these prices when spring opens up."

QUITE FAVORABLE OUTLOOK AT EVANSVILLE.

"John Andres, Sec'y-Treas. Standard Brick Manufacturing Co., Evansville, Ind.—"We consider the present outlook for the brick and tile business quite favorable. We believe that prices have become quite stabilized and are not looking for any material change, either in the cost of production or in the market price. The prevailing price per thousand on hard common clay brick is \$14.00 per thousand and on shale common, \$15.00 per thousand. The average price of rough texture face brick is \$25.00 per thousand. Usually we manufacture drain tile or hollow building tile, but have not manufactured new stock for the past six months. We expect to resume the manufacture of tile in spring."

"Recently we erected some large storage sheds at our plant No. 1 and plant No. 4 to protect our stock of brick from the weather and enable us to make shipments of dry brick all through the winter."

TO BE BIGGEST YEAR IN HISTORY OF BRICK MAKING.

"F. W. Salmen, Pres. Salmen Brick & Lumber Company, Ltd., New Orleans, U. S. A.—"We feel very optimistic. I have just made a tour of the entire United States and I have come back more optimistic than ever. I believe that 1923 is going to be one of the biggest years for the brick industry that we have ever experienced. As to conditions in our particular vicinity will state that the prospects in the country surrounding New Orleans are very excellent; there has not been any material change in the price of brick for the past six months—but the tendency at this particular time seems to be upward

in price and with the demand that we anticipate for brick, which we believe will commence within the next ninety days—and the increased cost of labor—the increased cost of fuel, I feel sure that the price of our products will have to be increased. The prevailing price per thousand on common brick delivered in New Orleans is \$14.50; face brick, \$25.00; paving brick, \$40.00, and fire brick, \$50.00.”

PROSPERITY HINGES ON LABOR SITUATION.

“Spencer M. Duty, Pres. The Medal Paving Brick Co., Cleveland, Ohio.—“We believe that the outlook for the brick and tile business, as well as other kinds of business, is largely dependent upon the labor situation.

“If this country is afflicted this year with a mine and railroad strike, such as that of last year, we believe that business will not be good. It hardly seems that this country can again afford the luxury of more strikes of that kind. If they come, the cost of living will rise so high as to stop any of the prosperity that we now have. It is idle to predict either an increase or decrease in prices until we know whether, or not, we are to have another coal strike.”

EXPECTS RUSHING BUSINESS IN SPRING.

“Jotham Post, Pres. Jotham Post Co., Glen Head, L. I., N. Y.—“We stopped making brick December 23. Made a little over 9,000,000. We finished burning our last kiln, the first week in January. We stopped so we could get things fixed up for another season. It looks as though we would be rushed next spring. I hope it will be no worse than last year, when at no time could we get brick burned fast enough to accommodate our customers. We were out of brick every other week. We do not ship at all by freight. Our brick are all carted away by auto trucks right to the jobs. We have had difficulty in getting coal, either hard or soft, and the price was way up. My coal bills the past season run up to over \$23,000. The Christmas number of The Clay-Worker was fine, keep up the good work. Will see you all at the convention.”

1923 TO BE FAR BETTER THAN 1922.

“C. Gerald Hess, Mgr. Lawrence Brick and Tile Company, Lawrence, Kansas.—“We in this section feel sure that both brick and tile business is going to improve and be far better than it was during the year 1922. We look forward to a very prosperous spring, but are not so sure as to what follows after the spring. Condition of the crops is an important factor in this section. We do not look for any further decrease in the price of clay products, but are inclined to think that there will be a slight rise. Prevailing prices of sales agents are Common Brick, \$9.00, delivered on the job, around \$15.00; Face Brick, \$25.00 to \$26.00, and 5x8x12 Hollow Building Tile, \$56.00 per thousand f. o. b. plant. We are not considering enlarging this plant. The Noll Brick and Tile Company, at Wichita, Kansas, are just completing a modern brick and tile factory.”

BRICK BUSINESS TO BE BEST EVER.

“O. W. Ketcham, Pres. O. W. Ketcham Co., Philadelphia, Pa.—“The present outlook for 1923 leads me to believe that, the demand for building material of all kinds will be greater by far than that of 1922, which undoubtedly exceeded all other years. With such a condition confronting us we can only arrive at one conclusion, and that is that prices, if they move, will move upward.

“We know that employment is, and has been for some time, fully one hundred per cent employed, consequently we can not expect any relief in the cost from this source, likewise freight rates, which as far as we can determine will remain practically unchanged. These two items alone are of such importance in the cost of production and delivery that no downward movement in prices can take place while they remain as they are.

“Face bricks are selling anywhere from \$35.00 to \$45.00 per thousand at Philadelphia, prices varying according to color and quality. Common brick from \$21.00 to \$23.00. Hollow tile is holding at from \$10.00 to \$12.00 per ton. Sewer

pipe is being quoted at the regular listed figures less about 60 per cent discount.

“We know of no new plants or the contemplated erection of such here in our vicinity, but we do know of several that are preparing to increase their output materially, and in this we think they show keen business sense, because they realize that the future demand will be such as to justify the expense they are going to.”

OUTLOOK GOOD IN GEORGIA.

“W. E. Dunwoody, Pres. Standard Brick Company, Macon, Ga.—“The present outlook for brick and tile business as we see it, is good. We do not look for any material change in the market price, though there will probably be some advance. The prevailing prices on common brick in Georgia is \$9.50 for kiln run; \$10.50 for all hard; face brick, \$25.00 per thousand f. o. b. cars at the plants. Hollow building tile, size 8x12x12, \$151.60 per thousand pieces f. o. b. plants.

“We do not contemplate enlarging our plants, for the reason that there are too many brick plants in Georgia now. We are, however, using our every endeavor to increase the efficiency of our plants by reducing every process to a science, by employing technically educated heads of departments and by putting every improvement possible in material, dryers and kilns. We know of no new plants being built, or proposed in this state, and any plans in that direction would be ill-advised. For any one who would like to go into the brick business in Georgia, the writer will undertake to get him options on any number of plants he desires.”

PROSPECTS GOOD AT QUINCY.

“John T. Hummert, Sec’y and Treas. Gem City Press Brick Company, Quincy, Ill.—“Business within a radius of a hundred miles from the city of Quincy has been very satisfactory. There were not many large buildings such as factories, schools or churches built. The trade was mostly for dwellings and small structures. But notwithstanding this the prices were firm during the whole season, and I think every manufacturer can come before his stockholders and declare a satisfactory dividend.

“The prospect for the future in this territory is good. Architects are all busy making plans for several large buildings which have been under consideration for the last four or five years. They seem to be a sure go now. People are beginning to realize that things have gotten down to normal conditions again. Prices in this district f. o. b. cars at the plant are \$18.00 to \$22.00 for face brick, \$14.00 for No. 2’s and \$11.00 for No. 3 hards. These prices will prevail during the coming season unless the price of labor and fuel increases, which we hope will not occur. The plants in this territory can take care of the business even if the demand is doubled, because they have, in the last five years, run their plants to only half capacity. In view of the above facts we can look forward to a good and prosperous season. There will be business for all of us. If you doubt what I said, I’ll be ready for that. At the Cleveland Convention I’ll carry a brick in my hat.”

GREAT DEAL OF WORK CONTEMPLATED.

G. B. Lockett, Secy. Crawfordsville Shale Brick Co., Crawfordsville, Ind.—“We are pleased to advise that so far as our own company is concerned the indications are for a good demand, fully equaling that of the past year. There is a great deal of work contemplated and unless something unforeseen develops there should be an outlet for practically all of the brick produced by the several factories in this section. This will naturally have a tendency to maintain prices, and, inasmuch as the general trend will be towards higher labor costs, we may expect some slight increases in prices as the season advances, though we believe there will be nothing that will warrant any great change over the present prevailing plant prices, which approximate from \$18 to \$22 per M for rough texture face brick and from \$11 to \$13 per M for common brick. We are just completing the installation of producer

gas equipment, which we believe will make a material improvement in our product and will also enable us to increase our production, owing to the fact that we expect to be able to burn in somewhat less time than hitherto. While the brick manufacturer undoubtedly has had his share of difficult problems to meet, we believe that conditions in a general way justify an optimistic view as to the stability of our industry."

A YEAR OF GREAT ACTIVITY.

John W. Sibley, General Sales Manager, Birmingham Clay Products Co., Birmingham, Ala.—"With reference to your inquiry regarding the prospects for the year nineteen twenty-three, beg to say that in our judgment it is going to be a year of great industrial and business activity. The past year was a great year in the building line, but the needs of the country and particularly the South are still far greater than the supply. The only cloud on the horizon is the uncertainty as to transportation facilities.

"The railroads are making strenuous efforts to provide power and equipment, but there are grave doubts of their being able to keep pace with the increased business conditions. The situation calls for the most cordial co-operation on the part of shipper and carrier to fulfill the needs of the public.

"The prevailing price on common brick is \$13, face brick \$24 to \$42, fire brick \$35. We are arranging additional kiln room and if the railroad situation gets settled will install a stiff-mud annex this summer."

OUTLOOK VERY ENCOURAGING

"Bernard F. Webber, Pres. National Brick Company, Chicago, Ill.—"The present outlook for the common brick business in the City of Chicago is very encouraging for the coming year. We have a large number of orders on our books at this time and do not think that there will be any material change in the demand or market price. The prevailing price per thousand on common brick is \$12.00. The prices on face, paving and fire brick vary so considerably, that we have no information which would give you a fair idea of same.

"Referring to the matter of enlarging any of our plants, we wish to state that we have expended a very large amount of money in rebuilding one of our plants and do not expect to be required to expend very much more money on any of our plants the coming year, inasmuch as we consider them fully equipped and modern in every way as any in the country.

"We hope to see you at the convention in Cleveland between the fifth and tenth of February and expect to find the brick manufacturers of the country in a very hopeful and enthusiastic frame of mind."

A MARKED IMPROVEMENT EXPECTED.

O. M. Booher, Genl. Mgr. Kokomo Brick Company, Kokomo, Ind.—"In answer to your questionnaire bearing date of January 2, I am pleased to advise as follows, my answers to your questions being based entirely on recent observations and personal opinion:

"The brick business in 1923 should show a marked improvement over 1922. Only two adverse factors appear threatening at this time. First, continued labor disputes and strikes in coal fields, and, second, the increasing tendency of many lines of business and certain classes of skilled labor to demand excess compensation, thus retarding a general resumption of buying activity and healthy trading conditions.

"Brick prices of 1923 will, of course, be controlled by the two largest cost items, namely, labor and fuel, both of these items, judging from present indications, will be slightly higher than the 1922 average.

"Our present prices f. o. b. plant on all grades of Kokomo Red Sand Molds average near \$14.00 per M. said price being some higher than 1921 and spring of 1922 prices, but 35 per cent lower than 1920.

"In an effort to expand our business we have recently added a rather thrifty retail department including domestic coal and building supplies. We expect to enjoy a good patronage in this new venture in 1923.

"During 1922 our plant was forced to close for 62 working

days, because of the Coal Mines and Rail Strikes. In spite of these adverse conditions our 1922 output and sales were far in excess of 1921.

"We feel that we have a right to expect smoother going in 1923 and that a few more smiles on the faces of our stockholders will be in evidence before 1924 rolls around."

BUSINESS OUTLOOK IN PITTSBURGH VERY GOOD.

Wm. E. Sankey, Sankey Brothers, Pittsburgh, Pa.—"We do not look for any material change in the price of brick, so long as coal and labor maintain their present prices. The outlook for 1923 in this vicinity is very good, with common brick selling for \$15.00, face brick for \$28.00 and 8x12x12 hollow building tile at \$60.00."

MUCH BUILDING CONTEMPLATED IN NEW YORK.

W. K. Hammond, New York City, N. Y.—"Our plant at Dutchess Junction is closed for the year. The prices for common building brick, which is the only kind we manufacture, is \$20.00 at the dock, wholesale. According to the newspaper reports of buildings under way and contemplated, great activities in construction lines is promised, and we of course expect to get our full share of this business."

BIG DEMAND FOR BUILDING MATERIALS BETWEEN NOW AND SPRING.

J. F. Reynolds, The I. L. Stiles & Son Brick Co., North Haven, Conn.—"The outlook for brick at the present time is very good. The stock on hand is not large and it looks as if there would be a big demand for brick between now and spring. In fact, think any one intending to build should get under way as soon as they can, as it looks as if all building materials would be higher instead of lower in the next two months, especially next spring. We are now installing two dryers. In fact, one of them is now in operation and we are making 60,000 brick a day. The other one will be in operation next week and it, too, will have a capacity of 60,000 to 70,000 brick."

INCREASING OLD PLANT THIRTY PER CENT AND BUILDING NEW PLANT.

R. C. Burton, The Burton-Townsend Company, Zanesville, Ohio.—"As I see it, the brick and tile business will be good for five years, prices are going to be higher, and we will all get better profits. We are now getting \$16.00 for common brick, \$22.00 for face brick and \$25.00 for paving brick. We are now making additions to our present plant which will increase our capacity thirty per cent. In addition to this I am going to build a plant of my own which will have a daily capacity of 400 tons of clay products, including common brick, face brick, pavers and hollow tile. The land is purchased and work will be commenced on the plant as soon as weather permits. I don't mind telling you this plant is going to be the last word so far as layout and equipment is concerned."

EXPECT VERY BUSY YEAR.

D. C. Haeger, Pres. Haeger Brick & Tile Company, Aurora, Ill.—"We are looking forward to a very busy year on special hollow tile and other clay products. We feel that the farmers are about to come into the market strong this spring for drain tile and also hollow tile for farm buildings, and with orders ahead for several months we are working every day to keep up with the demand.

"In regard to prices, wish to say that there is an upward tendency in the prices of lumber and it is very evident that prices of other building material will follow. With a shortage of common labor, which is very essential on most clay plants there will no doubt be a general increase in wages which will have to be taken care of by an increased price as well as by much better efficiency in the operation of clay plants.

"We have no plans at present of enlarging our plant, but have been making a great many minor improvements, which are giving us better production. We are figuring on doing more work with a night shift and in that way can get a great deal more work done each day. There are no new plants being built in our territory, although we understand that a great many plants have been making some radical improvements in preparation for a very busy 1923."

DEVELOPMENTS AT WASHINGTON OF INTEREST TO
THE CLAYWORKING INDUSTRY.

DEPARTMENT OF COMMERCE has been officially advised by the Canadian Department of Customs and Excise that the importations of fire brick into Canada hereafter will be governed by the following decision, which has just gone into effect: "Silica fire brick composed of not less than 90 per cent of silica, magnesia fire brick and chrome fire brick are of a class not made in Canada and are therefore entitled to free entry of customs duty under Tariff Item 281. All other fire brick are held to be of a class made in Canada and subject to duty under Item 282. This ruling does not apply to fire brick bona fide ordered prior to November 1, 1922, and entered for consumption prior to January 1, 1923." The department points out that fire bricks under Item 282 are dutiable at General 22½ per cent, and Preferential 12½ per cent.

The Census Bureau reports the following prices prevailing on December 15 in forty-four cities for common brick per thousand:

Scranton	\$25.00	Columbia	12.00
Baltimore	20.00	St. Petersburg.....	20.00
Fairmount	24.00	St. Louis.....	14.50
Savannah	15.50	Sioux Falls.....	18.00
New Orleans	15.75	Tucson	12.00
Grand Forks	13.50	Portland, Ore.....	19.00
San Antonio.....	13.00	Fitchburg	24.00
Sacramento	17.00	Fall River.....	25.00
Seattle	20.00	Albany	22.50
Haverhill	24.00	Niagara Falls.....	24.00
New London.....	30.00	Syracuse	18.00
Rochester	16.25	Pittsburgh	14.25
Poughkeepsie	18.00	Cleveland	16.00
Newark, N. J.....	21.00	Lorain	22.00
Erie	16.75	Dayton	17.00
Akron	14.00	Detroit	17.00
Newark	19.00	Bay City.....	13.00
Hamilton	23.00	Benton Harbor.....	18.00
Pontiac	16.00	Lansing	14.50
Saginaw	17.50	Waterloo	18.90
Camden	23.00	Milwaukee	13.00
Richmond	18.00	Council Bluffs	16.50

The Census Bureau also reports the following prices prevailing on the same date for hollow tile. Price is given on 8x12x12-inch, each:

Scranton	\$0.24	Baltimore	.21
Richmond	.25	Fairmount	.23
Columbia	.20	St. Petersburg.....	.23
New Orleans	.23	Kansas City, Mo.....	.22
Sioux Falls.....	.16	Tucson	.18
Seattle	.30	Fitchburg	.27
Haverhill	.27	New London.....	.25
Albany	.23	Rochester	.21
Poughkeepsie	.21	Syracuse	.20
Pittsburgh	.21	Erie	.20
Akron	.17	Lorain	.17
Newark	.18	Dayton	.18
Hamilton	.18	Detroit	.21
Pontiac	.18	Bay City.....	.16
Saginaw	.17	Milwaukee	.14
Waterloo	.14	Council Bluffs	.14

The brickmaking plant of West Brothers Brick Co., located just across the Potomac River from Washington, was badly

damaged by fire on December 22. The cause of the conflagration has not been determined. The District of Columbia Fire Department assisted in extinguishing the blaze. The loss will exceed \$10,000. The plant, which is one of the largest in this section of the country, will be immediately placed in running order again.

In the eleven months of 1922 ended November 31 the total production of brick was as follows: Face brick, 50,383,000; silica brick, 119,490,000; fire brick, 504,512,000. In the same eleven months of 1921 the production was: Face brick, 389,730,000; silica brick, 58,201,000; fire brick, 350,347,000.

The Bureau of Standards, Department of Commerce, has completed an interesting investigation of the fire resistance and other physical properties of hollow building tile. The experiments were made in co-operation with the Hollow Building Tile Association. A furnace suitable for making fire tests of panels up to four feet square was built and tests of unprotected panels built from tile of representative clays have been made in order to establish characteristic behavior under fire. A wide range in fire resistance was found, depending mainly on the mineral composition of the clays employed. As a possible means of increasing fire-resisting properties, grog additions up to 10 per cent were tried, but it was found that the small addition which can be conveniently made in manufacturing practice had no effect, and that additions of 5 per cent or more decreased the fire resistance. The protection afforded by typical plasters has been determined, obtaining, generally, excellent results. The effect of the addition of combustible filler to the raw material, of the fineness of grinding of the raw material, of the size of the unit and of changes in design of the tile, will be ascertained.

In conjunction with the fire tests, determinations of the absorption, compressive strength, expansion, mineralogical composition, and ability to withstand freezing are being made. Several different methods for determining the absorption were tried and as a result saturation of the specimens by boiling five hours and allowing to soak in water at room temperature for at least one hour before taking the saturated weight was adopted as giving the most practical and consistent results for inspection work. This part of the investigation has been reported in a paper on "Effectiveness of Different Methods of Making Absorption Determinations" in Vol. 5, No. 11 of the Journal of the American Ceramic Society. The method of preparing tile for compressive strength tests was studied in a series of tests in which tiles with various caps at ages from one hour to seven days were used. The results indicated that a cap of three parts of Portland cement to one part of unretarded gypsum (plaster of Paris) at the age of seven days gives the highest and most consistent strengths.

The Washington bureau of "The Clay-Worker" is in receipt of a communication from H. S. Fairbank, senior highway engineer of the Bureau of Public Roads, stating that of the "federal aid" roads completed in the fiscal year July 1, 1921, to June 30, 1922, 273 miles were surfaced with paving brick. The rule being followed throughout the country in the utilization of the various paving materials is that that material be used which best meets the conditions and requirements of the section building the highway. Should brick be the most available material for a certain section, conveniently accessible and preferable from an economical viewpoint, this material is being used; where long hauls and expensive transportation are necessary in order to utilize brick, cement or other materials more readily accessible are being used. Of the brick-paved roads already constructed fully two-thirds are in the middle western states and mostly in fairly close proximity to brick-manufacturing centers. According to the Bureau of Public Roads, this plan is being followed throughout the road-building program.

The value of buildings for which permits were granted by the District of Columbia in the calendar year 1922 was close to double that for 1921. Building permits for structures valued at \$49,640,000 were issued in the year as against \$24,934,000 in 1921. Of the buildings erected in 1923, 3,048 were brick, 79 were tile, 93 were concrete and 821 were frame.

ALTHOMAR.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



HE BUILDING outlook in Evansville and other towns in southern Indiana is much more encouraging than it was at this time last year and brick manufacturers and contractors are of the opinion that building operations in 1923 will be much more active than they were during 1922. In the city of Evansville the building permits for 1922 amounted to \$3,000,000, this being greater than any other year since the close of the world war. The building operations have remained quite active all winter and a great deal of construction work is now under way and much more is being planned for the coming spring and summer. Not only will there be more building of a commercial nature during the coming year, but in the opinion of contractors and building material men there will be a great deal more building of residences.

Optimistic as to the spring demand for building materials, the Standard Brick Manufacturing Company at Evansville is planning to run one of its plants all winter and another as long as the weather will permit. This announcement was made a few days ago by John Andres, president of the company. Sheds to store the accumulated output have been erected at both the east and west side plants of the company in Evansville. The west side plant, which is equipped for winter work, will be run all season. The plant closed down for a few days during the holidays in order to make repairs. The east side plant will be operated all winter also unless very unfavorable weather should set in. Building brick, building tile and possibly some drain tile will be made during the winter.

Equipment for the construction of the \$125,000 building to be built at Cannelton by the Cannelton Sewer Pipe Company was shipped to that city a few days ago by the M. J. Hoffman Construction Company, which has been given the contract for the improvements. The building will be a four-story structure and will provide about 150,000 square feet of floor space. Work has been started and if the weather will permit it will be rushed during the remainder of the winter months. About four months will be required to complete the improvements, it is announced. When the improvement has been completed the sewer pipe company will have a much larger capacity and will add several more men to their pay roll.

Reductions in freight rates on brick shipped to points within the State of Indiana have been ordered by the state Public Service Commission at Indianapolis, according to word sent to Leslie Lacroix, manager of the traffic department of the Evansville Chamber of Commerce. The reduction places the Indiana rates on the same level as the Illinois rates, according to Lacroix. It had been previously maintained that the Illinois brickmakers had an advantage over the brick men in Indiana because of lower freight rates.

There was a hearing of the Interstate Commerce Commission held at Evansville on January 5 to consider the reduction of freight rates on coal to Evansville from the western and central Kentucky fields. The hearing was asked for by the mine owners of western Kentucky, the Evansville Chamber of Commerce, the Standard Brick Manufacturing Company, the Best Manufacturing Company and other large manufacturing concerns of the city of Evansville. The commission took the matter under advisement and a decision is expected within a short time. The Evansville manufacturers contended that the rates should be lowered in the interest of business

and in fairness to the manufacturing interests of the Ohio valley.

Clarence Schutz, president of the Best Brick Company at Evansville, is back from a business trip on the road. He reports a steady improvement in business conditions and believes that the new year has in store many good things for the brick manufacturers of Evansville and southern Indiana. He says his company has several large contracts on hand for brick in various parts of the country and he is expecting one of the biggest booms in building that the state has witnessed in several years.

L. A. Folsom, head of a brick manufacturing concern at Boonville and an attorney of that city, has been re-elected county attorney of Warrick county to serve another year.

A HOOSIER.

POTTERY COURSE IN CALIFORNIA.

BEGINNING with January for the spring term the California School of Arts and Crafts, Beverley, Calif., puts on a course in pottery by William G. Whitford, of the University of Chicago, who is a specialist in pottery and ceramics and an authority on arts education. The California School of Arts was founded in 1907 by Mr. and Mrs. Frederick H. Meyer and has continued to make steady and useful progress right along. The latest announcement of progress seems to be the addition of this subject in pottery and ceramics.

BOOSTING TERRA COTTA.

MATERIAL FACTS, a house-organ publication gotten out by the Cleveland Builders' Supply and Brick Co., had as a feature of the Christmas issue a good and timely boost for terra cotta, dealing specifically with the product of the Atlanta Terra Cotta Co. The home office of Atlanta Terra Cotta is in New York, and nearby are plants at Tottenville, on Staten Island, Perth Amboy, and Rocky Hill, New Jersey, and there is a southern branch at Atlanta, Ga., with a factory at East Point, Ga., the southern division being separately managed. Terra Cotta is entitled to more attention than it has been getting, so it is both proper and cheering to see important dealers manifesting a live interest in this product which plays such an important part in the decoration and architectural features of our most imposing buildings. We are told, too, that the Atlanta company gets out for distribution to architects a special publication illustrating, not only their own products, but terra cotta of the Italian Renaissance of the fifteenth century.

A COLLOQUIUM ON FELDSPAR.

EDWARD SCHRAMM, of the Oonodaga Pottery Co., Syracuse, N. Y., is to conduct a colloquium on feldspar classification and specifications at the annual convention of the American Ceramic Society, February 12-16.

The discussion on feldspar was started at the St. Louis meeting, the discussion at that time being focused on milling problems with only incidental references to questions of quality and methods of determining quality. This is a subject or feature of the subject that Mr. Schramm is seeking to develop a colloquium on for the annual meeting.

He has already addressed a letter to various concerns which should be interested asking for papers, questions and suggestions, and it is hoped to make this discussion an important contribution to the program of the annual ceramic convention.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

ABSORPTION TESTS ON HOLLOW TILE.

THE HOLLOW BUILDING TILE ASSOCIATION in connection with the research work on the fire resisting properties of hollow building tile, says that several auxiliary tests have been made to determine absorption, compressive strength, expansion and frost resistance. They have gotten out in pamphlet form for the membership a paper on the effectiveness of different methods of making absorption tests on hollow building tile, which is a reprint from the journal of the American Ceramic Society of matter prepared by Harry D. Foster. Three methods of testing were used. Cold water immersion, five-hour boiling tests, and vacuum treatment tests. The pamphlet gives an explanation of these and is a valuable contribution to the literature on hollow building tile.

HOLLOW TILE MEETING.

THE 5TH ANNUAL MEETING of the Hollow Building Tile Association is to be held at the Drake Hotel, Chicago, January 25-26. As every effort is being made to have this the big event for the month in hollow tile circles there will be no group meetings in January. The big annual convention will take the place of the group gatherings, and the group gatherings will be resumed again in February. It is expected, too, that since the membership drive has added quite a list of new members that the coming meeting will be the biggest in the history of the association. This organization has been doing some splendid work during the year and enthusiasm should be up to the point now which will insure not only a good attendance but also a lively interest and a rousing meeting.

GROUP DOINGS.

DECEMBER MEETINGS of various groups of the Hollow Building Tile Association were largely annual gatherings which included the election of Chairman, Vice-Chairman and the nomination of group director.

Group 6, comprising Kansas, Missouri and Oklahoma, met in Kansas City, December 5, and the annual election resulted in the election of Mr. Amos of the Humbolt Brick and Tile Co., Chairman, and his nomination as group director. S. L. Cammett, of the St. Joseph (Mo.) Brick Co., was elected Vice-Chairman.

Group Number 7, comprising Texas, Arkansas and Louisiana, met at Fort Worth, Texas, December 7, with practically every manufacturer in the territory present. P. E. Miller, of the Athens Pottery, was nominated Group Director, while J. R. Martin, of the J. R. Martin Tile and Brick Co., was elected Group Chairman.

Group Number 5, comprising Iowa, Minnesota, South Dakota, Nebraska and North Dakota, met at Des Moines, Iowa, December 12. H. R. Straight, of the Adel Clay Products Co., was nominated Group Director, and the election of Chairman and Vice-Chairman was postponed until next meeting.

Group 3, comprising Indiana, Illinois and Wisconsin, met December 14 at Chicago. W. Gilbert, of the Chicago Fire Brick Co., was elected Group Chairman. Geo. W. Dee, of the William E. Dee Co., was elected Vice-Chairman, while Frank R. Hale, of the Vigo-American Clay Co., was nominated Group Director.

Group Number 1, comprising New York, New Jersey and New England, held an annual meeting in New York, December 26. R. P. Keasby, of the National Fire Proofing Co., was elected Chairman; W. A. Snow, of the American Clay Products Co., Secretary-Treasurer, and V. L. Yepsen, of the Annes & Potter Fire Clay Co., was nominated Group Director.

Group Number 4, comprising Kentucky, Virginia, Tennessee, North Carolina, Mississippi, Alabama, Georgia and Florida, met at Atlanta, December 21. W. E. Dunwoody, of the Standard Brick and Tile Co., Macon, Ga., was elected Chairman; R. L. Gamewell, of the Birmingham (Ala.) Hollow Tile Co., was elected Vice-Chairman, and C. W. Dixon, of the Columbus (Ga.) Brick and Tile Co., was nominated as Group Director.

MEMBERSHIP ADDITIONS.

THE HOLLOW BUILDING TILE ASSOCIATION membership committee put on a splendid and forceful drive for new members and as a result of this intensive campaign these are some of the new members added to the organization:

- Colchester Brick and Tile Co., Colchester, Ill.
- Morey Clay Products Co., Ottumwa, Iowa.
- Standard Brick Co., Macon, Ga.
- Peninsula Brick Co., Salisbury, Md.
- Athens Pottery Co., Fort Worth, Texas.
- Texas Clay Products Co., Malakoff, Texas.
- Macomb Sewer Pipe Works, Macomb, Ill.
- Columbus Brick and Tile Co., Columbus, Ga.
- Portland Drain Tile Co., Portland, Ind.
- Post Brothers Tile Co., Commerce, Mo.
- Williamson Brothers, Sweetser, Ind.
- Atlantic Building Supply Co., Atlantic, Iowa.
- Tate Tile and Silo Co., Minneapolis, Minn.
- Birmingham Hollow Tile Co., Birmingham, Ala.
- Roper, Strauss-Ferst Co., Birmingham, Ala.
- Krick, Tyndall & Co., Decatur, Ind.
- Hay-Walker Brick Co., Pittsburgh, Pa.
- Continental Clay Co., Canton, Ohio.
- Ohio Fireproofing Co., Cleveland, Ohio.

OFFICIAL ANNOUNCEMENT



THIRTY-SEVENTH ANNUAL CONVENTION TO BE HELD AT CLEVELAND, O., FEB. 5 to 10, 1923.

THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION will hold its Thirty-seventh Annual Convention at Cleveland, Ohio, the week of February 5th, 1923, in conjunction with the Fifth Annual Meeting of the Common Brick Manufacturers' Association. There will be no intermingling



Cleveland the Center of the Great Clay Industry.

of sessions, the latter association holding its meetings Monday, Tuesday and Wednesday and the N. B. M. A. beginning with the Smokerette and Dinner Dance Wednesday evening and continuing the balance of the week.

THE CONVENTION CITY. Cleveland is the very heart of the clay industries of the nation. The N. B. M. A. met there last in 1916 when a high record of attendance was registered, nearly a thousand being present. Since that time new hotels have been built, the city has grown immensely in every way, population, wealth and amusement features, making it one of the most attractive cities in the nation.

Clay and Machinery Plants In and Near Cleveland.

There is in the immediate vicinity a number of large clay-working establishments of all sorts which will be open to delegates and where up-to-date equipment may be inspected. But a few miles distant are the clay centers of Akron, New Castle and Youngstown and the homes of the leading clay machinery firms at Bucyrus, Canton, Columbus, Dayton, Galion, New London, Plymouth, Wellington, Wellsville and Willoughby, to which there will be pilgrimages by many of the delegates convention week.

From every viewpoint the selection of Cleveland is a happy one and an old-time rousing big gathering is sure to assemble there convention week.

WINTON HOTEL HEADQUARTERS: The beautiful Winton Hotel will be headquarters for both conventions. It is most admirably adapted for the transaction of the business and social functions of the two associations. Never have we enjoyed more sumptuous accommodations and facilities at any of the annual meetings. The convention halls and display rooms are unsurpassed and the entire equipment and service is of the highest class. Every guest room in the Winton has a bath and the rates are reasonable, from \$3.00 to \$5.00 for



Rainbow Room, Winton Hotel, Cleveland.

single and \$5.00 to \$7.00 for double rooms. Where extra guests occupy rooms with their friends, the added charge will be \$2.00 per person. There is a fine cafeteria or coffee shop that affords quick service for those desiring it, while the regular dining room service is first class in every respect.

Reduced Railroad Rates.

Have been granted by the Central Passenger Association and concurred in by the Trunk Line Association, the South-eastern Passenger Association, Trans-Continental Passenger



Ball Room Where N. B. M. A. Sessions Will Be Held.

Association, Western Passenger Association, New England Passenger Association, Southwestern Passenger Association, and Canadian Passenger Association (Eastern lines). Presume other associations will follow suit, making the reduced rate available from all points in the country **provided there are two hundred and fifty certificates.** These will be in evidence all right if each delegate will take a certificate for each fare paid going. Of late years, the trouble has been so many of our members have failed to take certificates. This we trust will not be true

at the coming convention. Instead, we hope EVERY MEMBER will take a certificate whether he expects to use it or not. The certificate costs nothing. If used it saves one-half the fare paid going. That is, one-half of the return fare. So for the benefit of the other members, if not for yourself, be sure and ask for and insist on having a certificate for each fare paid going. It might be well to ask your local ticket agent a few days in advance, so in case he should not have the certificate blanks he can obtain same in time for your use.

The Second and Third Floors for the Trade Missionaries.

Two floors, second and third, have been reserved for the trade missionaries, the machinery and supply dealers, and specific reservations will be made and observed. All sessions and functions will be held at the Winton. Early reservations are requested. The Union Station cars pass the door of the hotel.

N. B. M. A. Program.

The first session of the N. B. M. A. will as usual be devoted to routine business, including an address of welcome by Mayor Fred Kohler, the election and installation of officers, the reports of standing committees and an edifying address by Ralph Sunderland of Toledo, Ohio, on "The Mission of Brick." The ladies have usually attended this session and they will be expected to do so at Cleveland. They are always delighted with President Sibley's report and the informal introductions and acknowledgments by the officers, new and old. Ex-president C. P. Mayer promises an interesting fifteen minutes' treat on his observations during a recent trip abroad.

Among the instructive papers which will be presented during the sessions are the following:

"A Practical Program for Better Business," P. M. Trout, Babson Institute, Wellesley Hills, Mass.

"Brick and Their Distribution," C. W. Matthews, Columbus, Ohio.

"Railroad Facilities and Freight Rates," C. B. Stowe, Cleveland, Ohio.

"The Handling of Coal and Coke About the Brick Plant," (Illustrated) W. H. Kent, Weller Mfg. Co., Chicago, Ill.

"The Story of Paving Brick" (Moving Pictures) R. T. Hutchins, Vice-President Mack Manufacturing Co., Wheeling, W. Va.

"Profit and Loss in Brick Manufacturing," John P. Cahoon, President Salt Lake Pressed Brick Co., Salt Lake City, Utah.

"Producer Gas an Ideal Fuel for Burning Face Brick," Irving A. Ryttenberg, Sumter, S. C.

"Electricity in Clay Plants," T. E. Simpers, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

"Things Old and New in the Manufacture of Brick," Walter Simons, San Francisco, Cal.

"Improved Methods of Making and Handling Soft Mud Bricks," (Moving Pictures) R. C. Penfield, President American Equipment Co., Chicago, Ill.

"The Brickyard Superintendent," Marion W. Blair, Superintendent Murphysboro Paving Brick Co., Murphysboro, Ill.

"Why Are Brick Manufacturers Not Interested in Freight Rates on Clayworking Machinery?" S. Geijsbeek, Seattle, Wash.

"Drying and Burning Brick," Anton Vogt, Missoula, Mont.

"Ceramic Kinks in Saskatchewan," W. G. Worcester, Professor Ceramic Engineering University of Saskatchewan, Saskatoon, Sask., Canada.

In addition to the foregoing, there will be an equal number of questions for general discussion on various matters of importance, pertaining to brickyard management and equipment, such as "Our Labor Problems;" "Economy of the Diesel Engine;" "The Gas Engine as a Power Maker;" "Oil as a Fuel for Burning Brick;" "Mechanical Draft Versus Stack Draft for Kilns;" "The Advantages of Mechanical Method of Setting Brick Over the Hand Method in a 30 Foot Round Down Draft Kiln;" "Economical Methods of Handling Rough Texture Face Brick from 30 Foot Round Down Draft Kilns

to Cars— a Straight Distance of Approximately 32 Feet;" "Improvements in Kiln Furnaces for Coal Firing;" "Utilizing Waste Heat in Burning Periodic Kilns in Pre-heating Other Kilns;" "Making Hollow Building Tile on Brick Plants." In addition to which, there will be a Question Box for the use of those in attendance who desire information on any particular detail of the business.

The Smokerette and Dinner Dance.

The first social function of the N. B. M. A. will be the Smokerette and Dinner Dance, Wednesday evening in the beautiful ball room of the Winton Hotel. There will be a one-act skit entitled "Follies of '23," or "It's a Great Game if You Don't Weaken," put on by the members of the Cleveland Builders' Exception, put on under the personal direction of the Secretary, Edward A. Robert. Also a monologue by "Massa" John W. Sibley, of Birmingham, Ala., on "Off Hand Justice." There will be music galore and dancing. It will all be in formal, though dress suits will not be barred.

The Annual Banquet.

The big social event of the week, the annual banquet, will occur Thursday evening in the ball room of Hotel Winton. As in former years, it will be a subscription dinner under the auspices of the Executive Committee of the N. B. M. A. Among the speakers will be ex-Secretary of War Newton D. Baker, who is now president of the Cleveland Chamber of Commerce. Full evening dress is in order, but not essential.

Entertainment of Ladies.

Visiting ladies of both associations will be entertained by a Committee of the Common Brick Association. A special program of the events will be distributed at the convention.

A NUMBER BUTTON will be given to each N. B. M. A. delegate or guest to aid in identifying both the old as well as the new members. Same may be obtained from Secretary Randall at N. B. M. A. headquarters in Room 233.

N. B. M. A. Sessions Open to the Public.

All sessions of the National Association are open to the public. Those interested in the discussion of the various questions pertaining to better building and kindred themes will be welcome.

Those interested, directly or indirectly, in claywork of any character, or the use of clay products of any sort are invited to join the Association and participate in the proceedings of the convention. Members and their families or friends who may accompany them will be expected to participate in all the entertainments and proceedings.

Rules of Procedure.

All formal resolutions shall be presented in writing.

At the close of each essay or address an opportunity will be afforded for a full discussion of the subject under consideration.

No papers or essays not included in the regular program will be heard unless previously submitted to and approved by the executive committee.

Papers and addresses delivered during the convention become the property of the Association, and, in accordance with the rules of the Association, may not properly be given out for publication except by or through the secretary.

The proceedings of the convention will be copyrighted to prevent piracy, but the greatest publicity will be given all the convention papers and discussion at the proper time, after the report is complete, not before, when copies of any and all papers and discussions may be had free of charge on application to the secretary.

The complete program will be mailed those desiring further information relative to the meetings, the requisites of membership, or other details. Address The Secretary, at Indianapolis.

THE EXECUTIVE COMMITTEE,

T. E. WILSON, President.

THEO. A. RANDALL, Secretary.

C. B. M. A. CONVENTION PROGRAM

THE COMMON BRICK Manufacturers' Association meeting which will be held in Cleveland, February 5, 6 and 7, is expected to set a new standard in brick conventions.

By virtue of the national headquarters of the Common Brick Manufacturers' Association being in Cleveland, it is possible to make a demonstration of the activities of the Association that would not be possible in any other city. The offices of the organization, located in the Cleveland Discount Building, will be thrown open and utilized for some of the convention activities.

The business meetings will be held at the Hotel Winton, and the entire facilities of this large new hotel are at the disposal of the brick men during this week. From the time the visiting brick man and his family arrive in the city of Cleveland they will sense a spirit of welcome that the local committee in Cleveland say will be unusual. Although business is to be put ahead of every other consideration, the entertainment, especially of the ladies, is not to be neglected.

Results of the work that has been done since the formation of this Association will be demonstrated in a way, it is believed, that will leave in the minds of the brick manufacturers present no room to doubt the value of this kind of work. Particularly will the meeting show that these results are available to every brick manufacturer in the United States who wishes to take advantage of them.

Two Short Sessions Daily.

Due to the fact that the National Brick Manufacturers' Association will meet also in Cleveland during the last half of the same week, the Common Brick Manufacturers will complete their sessions on Wednesday afternoon, February 7. In order to give full time to all of the subjects up for consideration, it will be necessary to open the convention promptly at ten o'clock on Monday, February 5. Accordingly it is urged that every brick manufacturer and others attending this meeting arrive in Cleveland on Sunday, the 4th, if possible, so as to be well settled and ready for the business of the week early Monday morning.

There will be two short sessions each of the three days of the convention, starting at 10 A. M. and 2 P. M. A program will be made up to fill in the hours not occupied by meetings in visiting the office of the Association, local brick plants, and other features worth seeing in and about Cleveland.

Discussion on Advertising to Be Led by C. C. Parlin.

Among the speakers who will lead the discussions are Mr. Charles Coolidge Parlin, manager Commercial Research of the Curtis Publishing Company, publisher of the Saturday Evening Post, the Ladies' Home Journal, and the Country Gentleman. Mr. Parlin unquestionably is one of the most forceful speakers upon the subject of advertising in America. He will bring to the convention an experience second to no man in his profession. If there lives in America a brick man who does not believe in the value of advertising, he owes it to himself to come to Cleveland and hear Mr. Parlin speak. Until he sees the light on advertising he is unable to enter into his full opportunity.

Colonel Leonard P. Ayres of the Cleveland Trust Company, whose writings upon the building outlook have been published in many national magazines, will picture for the brick men the future in their industry.

Advertising will be discussed from the manufacturers' side by Mr. Edward S. Jordan, president of the Jordan Motor Car Company. Jordan began in a small way several years

ago to manufacture cars. He gives great credit to advertising for having placed his plant among the most successful in America. Mr. Jordan will have something to say to the brick men that they cannot well afford to miss.

R. C. Griswold to Discuss Salesmanship.

Robert C. Griswold, who taught salesmanship in the principal cities of this country and Europe, and one of the leading exponents of the famous Sheldon School of Chicago, will give one of those snappy, straight-from-the-shoulder discussions that will keep the audience on the edge of their chairs.

Aside from these men mentioned there will be few outside speakers. Nearly all the sessions will be devoted to discussions by the brick men themselves of problems that are closest to their heart and their pocketbook.

The consulting architect of the Association, Mr. D. Knickerbacker Boyd of Philadelphia, will give the brick men a shot that they will not soon forget on the subject of brick substitutes. Some manufacturers are complacently ignoring this insidious and formidable enemy. It will be worth their while to listen to this awakening address which will also tell what should be done to head off the attack.

Other Subjects to Be Considered.

The matter of cost accounting, of bricklayer apprenticeships, of local organizations and local advertising, each will be given sufficient time for thorough discussion.

Among the social features that will entertain all of the delegates and their families will be a night at Keith's Palace Theater, a new structure just opening in Cleveland, which is admitted to be the most magnificent playhouse in the world. A large section of the lower floor has been reserved for the brick men on Tuesday night, February 6. There will be grand opera with Mary Garden and other great stars on in Cleveland during the convention, and reservation of tickets will be made to accommodate the delegates who wish to attend.

Entertainment Features.

David Olmstead, the manager of the Hotel Winton, is providing a series of novel and intriguing entertainments for his guests during convention week. These will include a dinner dance on Wednesday evening which will be open for all of the delegates to both the Common Brick Manufacturers' Association and the National Brick Manufacturers' Association meetings. For the ladies there will be some special teas, card parties and matinees. Automobiles will be available for all who care to use them in sight-seeing.

Special Railroad Rates.

Special rates upon the railroads have been secured for this meeting, and assurance is given that if those coming to Cleveland will have forethought enough to take a certificate when they buy their ticket they may be sure of a half rate return fare. There need be no disappointment as in years past, if the brick men themselves will think to take the certificate.

Reservations should be made at once, and Secretary-Manager Stoddard agrees to have exactly the kind of room ordered waiting each delegate upon his arrival at the Hotel Winton if the reservations are made early.

Every brick manufacturer, whether a member of the Association or not, is cordially invited to attend. The machinery and equipment manufacturers also will be in attendance.

CANADIAN CLAYWORKERS CELEBRATE THE TWENTY-FIRST BIRTHDAY OF THEIR NATIONAL ASSOCIATION.

HAMILTON, ONTARIO, is the mecca for the clayworkers of Canada, Tuesday, Wednesday and Thursday, January 23, 24 and 25. The meetings will be held in the Royal Connaught Hotel. The sessions will be interspersed with a series of luncheons, dinners and other entertainment features which insures a very happy time for all who attend. Hamilton is the home of Ryland C. New, the president of the Canadian National Clay Products Association which will be joined this year by the Western Ontario Clayworkers' Association. It is anticipated there will be a goodly attendance from the United States, a most cordial invitation having been extended to all clayworkers north, south, east and west.

The indefatigable secretary, Gordon C. Keith, whose headquarters is at 51 Wellington St., West, Toronto, has prepared a most interesting program, covering almost all phases of the brick and tile industries. The convention will begin with a business session Tuesday morning and will continue until Wednesday noon, after which there will be a trip to the neighboring clayworking plants. There will be a theatre party Tuesday evening in which the ladies will participate. The same is true of the annual banquet which occurs Wednesday night.

All who can are urged to attend these meetings and participate in all the convention activities. For complete program, address Secretary Keith, as above.

SILVER JUBILEE CONVENTION OF THE AMERICAN CERAMIC SOCIETY.

THE ANNUAL MEETING of the American Ceramic Society, which is to be held in Pittsburgh, February 12 to 16, inclusive, is the 25th annual, or Silver Jubilee, gathering of that organization. Headquarters will be at the William Penn Hotel. The industrial division meetings on Tuesday and Wednesday and the exhibit of ceramic products, which will continue throughout the week, will be in the Fort Pitt Hotel. It is confidently hoped, too, that the attendance will be larger than ever before and a spirit of enthusiastic progress will prevail in the whole affair. General Secretary Ross C. Purdy has sent out an enthusiastic call and there is promise of a big time for everybody as well as valuable papers and discussions. The officers of the American Ceramic Society are:

Frank H. Riddle, President, Champion Poreclain Co., Detroit, Mich.; E. Ward Tillotson, Vice-President, Mellon Institute, Pittsburgh, Pa.; Ralph K. Hursh, Treasurer, University of Illinois, Urbana, Ill.; Ross C. Purdy, General Secretary; Nora W. Binns, Assistant Secretary; Emily C. Van Schoick, Assistant Editor, Columbus, Ohio.

WISCONSIN CLAYWORKERS TO MEET IN MILWAUKEE.

THE TWENTY-SECOND annual convention of the Wisconsin Clay Manufacturers' Association will be held in Milwaukee, Wis., Wednesday and Thursday, January 24 and 25. Oscar Zimbal, who has served the Association faithfully for many years as secretary, has an interesting program prepared and urges all of the old members, as well as all Wisconsin brick men who are not members to attend the coming convention. The Association has done good work in the past and is deserving of the support of the clayworkers of the state. Headquarters for the convention will be at the Republican House. For further particulars address the secretary.

WHY GO TO CLEVELAND?

ARE YOU ASKING yourself the question of why you should go to Cleveland the week of February 5-9? That is, why you should spend the time and money involved in making this trip? If so, there are plenty of good answers. One is that you are not spending money, but investing it. If you keep your eyes and ears open and are in anyway active in your inquiries you should certainly get enough in the way of ideas and information out of the annual gathering to make the time and money spent a splendid investment. You will find there the brightest men of the industry, not only leading practical business men in the clay industry, but also leading technical men, machinery men and experts in various lines who are prepared to furnish the latest ideas and information about things you may want to know, and that will be useful in your business. There is no doubt that these annual conventions have been a great factor in developing information and promoting progress in brickmaking and clayworking generally, and the wheels of progress move more rapidly year after year. There has been more progress the past ten years than in the previous ten years, and there will be still more in the next ten years. So if you are going to keep up with it your first start should be to be in attendance at this annual convention. In a word, come to Cleveland and you will find there the answer to many questions you may be asking, including that of why you should spend the time and money necessary to attend this annual gathering.

REPORT OF THE 1922 CONVENTION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS NOW READY FOR DISTRIBUTION.

WE HAVE JUST received the proceedings of the 1922 convention of the American Society for Testing Materials. It is known as Volume 22, and is issued in two parts.

Part I (1023 pp.) contains the annual reports of 34 of the standing committees of the Society, together with the discussion thereon at the annual meeting, and 84 tentative standards which have either been revised or are published for the first time.

Part II (591 pp.) contains 36 technical papers with the discussion, the annual address of the president and the annual report of the Executive Committee.

The technical papers contain valuable information on results of investigations by experts in the field of engineering materials and the reports of the committee cover Ferrous and Non-Ferrous Metals, Cement, Ceramics, Concrete, Gypsum, Lime, Preservative Coatings, Petroleum Products, Road Materials, Coal and Coke, Waterproofing Materials, Electrical Insulating Materials, Shipping Containers, Rubber Products, Methods of Testing, and Nomenclature and Definitions.

Any one desiring a copy may purchase same from C. L. Warwick, Secretary of the Society, 1315 Spruce Street, Philadelphia, Pa. The price of each part is \$6.00 in paper, \$6.50 in cloth, and \$8.00 in half leather binding.

THE "MAYER" OF BRIDGEVILLE HOME FROM EUROPE.

C. P. Mayer, ex-president of the National Brick Manufacturers' Association, recently returned from an extended trip abroad. Those who attend the convention at Cleveland can get first hand information from him as to the real situation in Europe. He had many interesting experiences. For full particulars buttonhole him at Hotel Winton.

THE CLAY-WORKER'S LEGAL DEPARTMENT.

(Readers in need of legal advice are invited to write to "Attorney-at-Law," care The Clayworker. Questions will be answered by letter, or, if referred to on this page, names and particulars which might identify the questioner will not be given.)

THE CAR SHORTAGE PROBLEM.

THE car shortage is affecting the clayworking industry among others, in at least two ways. Many plants are complaining of difficulty in obtaining coal, owing to this shortage, and some are shut down on this account; others again find difficulty in shipping their products to their customers from the same cause. Under these circumstances a brief consideration of the liability of the carrier in this respect may not be without interest.

Any railroad company, by virtue of the privileges given it by the government, has certain peculiar duties which are different from those exacted by law and by the general rules of business from ordinary commercial concerns. One of the first of these duties is that they are bound to carry at reasonable rates any commodities which are offered to them, with the possible exception, under certain circumstances at any rate, of dangerous explosives and the like. Barring these exceptions they are not allowed to discriminate in favor of any particular facilities a railroad can offer. Failing this, the railroad class of goods, or of any particular persons or firms. Any shipper has a legal right to his share of whatever transportation company is liable for damages or for a mandamus, which will compel it to treat all alike. There is no question but that the public has the right to demand that the railroad must furnish facilities sufficient to accommodate all such traffic as may reasonably be anticipated.

There are only two legal excuses which any railroad company can advance in defense of a failure to ship goods of any kind that are offered. The first is that the goods are dangerous, or for some other special reason they are unsuitable. This defense would not avail in the case of any goods connected with the clayworking industry, either coal or manufacturing materials, or the finished product. The second valid excuse would be that the demand for accommodation was sudden and unexpected, and that the company could not fulfill it without robbing other shippers of their rights. This defense would excuse delay in providing cars, but not more delay than is reasonable. In any case, it is probably not one which could frequently be applied to clay-workers' shipments.

It certainly would appear that the clayworking industry, in common with the rest of the public, has a very good case for compelling better service. The only conceivable reply on the part of the railroads would be that it is impossible for them to do any better. This argument would place the onus of proof upon them. They must prove that the chronic shortage of cars is something which they cannot humanly remedy. Of course such a plea, if it can be proved, would always excuse anybody from carrying out any public duty, but as to whether the railroads could possibly establish such a defense, I leave the reader to judge.

Although not arising especially out of the present situation, consideration of the general duties of railroads in connection with the carriage of goods may not be without interest.

In case the goods are breakable, as for example, pottery, it is the duty of the shipper to have them properly packed and labeled so as to show their fragility. In case they are broken in transit, the railroad may be called upon to make good the loss, but it would have an opportunity to try to show that the fault lay in the packing, in which case it would be relieved from liability.

Except when it can be shown that the shipper is to blame we may take it for practical purposes that the railroad is responsible for any damage to goods not matter how it arises. There are some legal exceptions to this broad statement, but the only one which is likely to arise in the experience of most

of us is what is known as the "act of God." If goods are destroyed or damaged through something with which no human being has anything to do, and which could not be foreseen or provided against by human foresight, that constitutes an act of God, and the loss must be borne by the owner of the goods whoever he may be. Acts of God include lightning, sudden floods, freshets, storms, etc. But suppose goods are damaged by some other means in which a human agency is in any way implicated, either by omission or commission, then, although the railroad company could not in any way have foreseen or prevented it, the law will hold it responsible, and it must make good the loss. Even an act of God will not save them if any human being has had a hand in the matter. For example, suppose a bridge is destroyed by a flood, and a freight train plunges into a ravine and a quantity of valuable china is broken. Here is an act of God, and the loss must be borne by the owner of the china. But suppose the destruction of the bridge is known in time, and by the fault of some switchman the train is not diverted, then the railroad company must make good the china. Even if the switch is interfered with by hold-up men who deliberately wreck a train, the railroad company must make good the loss, because there is no act of God, or, if there is an act of God, a human agency is also concerned.

This rather peculiar bit of law has its origin away back in the days before there were any railroads. Common carriers of all kinds were in those days frequently found to be in collusion with robbers, and it was only by making them responsible for loss by robbery that the practice was prevented of common carriers, stage coachmen and others, giving word to robbers when valuable goods were being transported, and sharing the proceeds of the robbery. Even now, railroad companies have to exercise continual vigilance to prevent their employees from stealing, and from being in collusion with thieves. It is by making the railroad companies responsible for all losses except those by act of God, that they are kept constantly at work in the public interest preventing these depredations.

The railroad company, in short, is regarded in law as the insurer of all goods in transit except where they are damaged or lost by inevitable and unforeseen accident, or when it can show that the shipper did not pack or mark them properly.

It is generally understood nowadays that the railroad is not bound to make good any losses beyond the declared value of the goods if the shipper has stated their value. The shipper, however, cannot be compelled to state the value except where local statutes or ordinances have been passed in the interest of carriers. Anyhow, if he states the value, as railroad agents commonly demand, he will be well advised to place it as high as he honestly can without increasing the rate of transportation. He can then claim in case of loss, the full value he has placed upon the goods, and it will be for the railroad company to prove, if it can, that the loss is less than the amount claimed.

Another peculiar rule, of which many people are quite unaware, is that the railroad company must carry goods by the usual route. Suppose for any reason other than a sudden emergency, when safety might demand unusual measures, a railroad company breaks this rule, it renders itself liable for anything which may happen to the goods, even though caused by an act of God, careless packing, wrong description, or any cause whatsoever. In such a case it would even be liable if the goods were seized in transit by a sheriff. Should an emergency arise which renders necessary material deviation from the customary route, a railroad company is under legal obligation to consult the owner on the matter if that is practicable.

The above general rules are subject to modification by special contracts, which may either be in the interest of the railroad company or of the shipper.

Carriers are thus protected as a rule against loss resulting from riots or strikes, and they are not bound to transport the goods within a definite time, unless by special arrangement.

If you want any legal advice write the Editor of our Legal Department. This is free service to our subscribers.

Written for THE CLAY-WORKER.

CLAY AND BUILDING NEWS FROM MILWAUKEE AND WISCONSIN



STEWART SCRIMSHAW of Wisconsin, former State Supervisor of Apprenticeship, is writing a series of text books for apprentices. His latest work, Bricklaying for Beginners, is just off the press.

The General Refractories Co., Ableman, Wis., has been incorporated with \$12,000,000 capital stock. Articles of incorporation filed are signed by W. Spraul, B. Sloan and J. Spraul.

Plans were recently completed for a factory building for the Ricketson Mineral Paint Works, South Bay Street, Milwaukee. The new structure is to be erected at Wilcox Street and Northwestern Road tracks and will be of mill construction on concrete foundation, three stories, 63 by 68 feet in size.

In Oakfield, Wis., nine miles southwest of Fond du Lac, is the only kiln in Wisconsin making drain and building tile from shale. The plant is on the ledge, which runs through the greater part of the state, and the shale is procured from banks by the "open mining" method. The capacity of the plant is 7,000 four-inch tile a day. The company makes drainage tile from four to eight inches in size and five by eight building tile. George Tesch is manager of the plant.

Building operations in Milwaukee are expected to duplicate their 1922 record this year and again exceed all previous figures, in the opinion of clay building supply men, as well as architects, contractors, etc. William D. Harper, building inspector, reported that the first day's activity for 1923 resulted in the issuing of permits for nearly \$300,000 worth of construction. "Tom" Dever of Ricketson & Schwarz opened the new year with a 1,000,000 face brick order for the new sewage disposal plant buildings of the city of Milwaukee. Indications from throughout Wisconsin report greater activity in construction at this time than is usual for the season, although the seasonal decline is in evidence. Men in a position to know predict that the building boom which was set agoing in 1922 will continue for another four or five years in Milwaukee and vicinity, as well as in other parts of the country. All manufacturers and dealers are optimistic as to the immediate future, with good prospects for an enormous building program ahead which will require a large number of face brick. According to Milwaukee brick concerns, prices will be maintained for a period of several months more but that when the general spring building campaign gets under way a shortage is bound to result and a price increase is inevitable.

"As predicted in the annual statement of building operations of 1921, the year just closed has been the greatest year for building operation in the history of the city," said William D. Harper, Milwaukee, inspector of buildings.

"We stated that the estimated valuation of building would be at least \$30,000,000 and might reach \$31,000,000 and I am pleased to state that it has reached the maximum, which is about \$6,000,000 in excess of the greatest previous year, 1921."

This increase is not caused by any large operation in any particular line, but is general, it is pointed out.

Manufacturers have been enlarging their plants, having thoroughly recovered from the depression. Commercial blocks have been built so as to take care of the necessary business increase. Many churches, lodges, schools, hotels, hospitals and theaters have been built, showing the revival to normal conditions, and that the people realize that although there has been a slight increase in the cost of material since last spring, they can not look for any decided changes while the demand is so great.

House building this year has been the greatest since 1912,

there having been built about 3,000 home apartments, which is about 20 per cent above the requirement to take care of the normal growth of the city, but Milwaukee is still many thousand homes short of taking care of the proper housing of its people, and even keeping up this increase each year it will take at least ten years to bring the city up to a normal housing condition and to properly house our people. As in the past, manufacturers have enlarged their factories and have not made the proper provision for the housing of their employees.

"I believe that these manufacturers should give more attention to this matter and make arrangements to provide homes for these people by subscribing to some building projects like or similar to the Garden Homes project," Mr. Harper said. "This has more than 100 homes under construction, which are being built and disposed of to tenants at a minimum cost, and I believe it to be the best project as yet undertaken in the country."

CLAY TRADE NOTES.

The T. A. O'Leary Company, Keenan Building, Pittsburgh, Pa., write they desire to get in touch with manufacturers of sane-lime brick machinery.

The Alton Brick Company, Alton, Ill., has quite a force of men at work making repairs and improvements on the plant recently purchased from the Banner Clay Works at Edwardsville, Ill. They expect to have same in shape for operation early in the spring.

The Southern Brick & Tile Co., Louisville, Ky., had some interference during the late summer because of a shortage in gas coal, which is essential to operate their gas producing plant, and this cut down on their work for a while. They have had a strenuous year of demand, however, and are looking forward to even busier times this year.

The Middlesex Hollow Tile Co. is the name of a new company just organized with capital of \$100,000.00. This company is to be located at Perth Amboy, N. J., and is to manufacture hollow tile. John H. Christine heads the organization and the offices are at 215 Rector Street, Perth Amboy, N. J.

The International Tile Co., New York City, has been recently organized under state laws with a capital stock of \$25,000.00, to manufacture building tile and other burned clay products. The new company is headed by B. Galvin, K. London and M. Estelle. Edward Petigor of 5 Beekman Street, New York, represents the company.

Fire recently destroyed one of the storage sheds at the plant of the Clay Brick Company, Newtown Hook, N. Y. The loss was small, being around \$5,000. The company plans to erect another shed at an early date.

GET INTO THE ARGUMENTS.

NO MATTER whether it is on the convention floor following the reading of a paper and the starting of discussion on some subject, or whether it is around the machinery exhibits, or among the buttonholers in the lobby, when there is interesting discussion going on touching either directly or indirectly your business, get into the argument. It is in taking an active part, asking questions and expressing your own ideas, that you get enlightenment and help enliven these annual meetings. So if you are not acquainted, get acquainted, and if you are where there is discussion, get into the argument and be an active man all around at the convention. In that way you will get more out of it yourself and help others to get more out of it.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

As Good as the Best.

Editor The Clay-Worker:

We are but a small concern, brickmakers, also bricklayers. We started operating a brick plant here at Rosebud in 1908, and have operated every year since and so far have never been able to make enough for the demand. We make a sand surfaced brick with the New Anderson brick machine. We do not claim to make the best brick made, but we do claim to make a good brick. We intend to remodel and enlarge our plant in the near future.

Rosebud, Mo.

KROFF BROS. BRICK MFG. CO.

An Optimistic Message From Georgia.

Friend Randall:—How are you? Hale, hearty, busy and happy, I hope, and your family, too, I trust are all well, with everything moving along smoothly. The Boll Weevil in this section has put a brake on business, but it is only temporary. We will either circumvent or overcome the evil effects of the pest.

Enclosed find copy of an advertisement we want inserted in the "OLD RELIABLE," and continued until we advise to the contrary

Yours truly,

Milledgeville, Ga.

J. W. McMILLAN.

Worth Twice the Subscription Cost.

Dear Mr. Randall:

I wish to inform you that I have made my reservations at the Winton Hotel for the week of February 5. All being well, Mrs. Burgess and I will be with you in Cleveland. I will pay subscription for The Clay-Worker when in Cleveland, as I feel that we cannot get along without it. No doubt about some of the articles being worth several times the subscription price.

It is always read and very often passed on to the foreman when there is an article concerning his department.

Wishing you a very prosperous New Year.

Yours truly,

WM. BURGESS,

Works Supt.,

The Don Valley Brick Works, Limited.

A Neophyte Desires Information.

Editor The Clay-Worker:

We are contemplating starting a brick and tile factory here and would like to get in touch with some of the manufacturers of brick machinery. Also would like to get a line on some second hand plants.

If you can make any suggestions to us in getting started in this venture we would appreciate it. Intend to make the brick from shale and use gas for burning. We do not know which would be the best, that is the dry or the wet process and would like to have your advice. Which is the most economical

in operation? What is the approximate amount of water needed to run a plant.

Yours truly,

HOLE, McGUIRE & COMPANY.

Montana.

Shooting Kiln to Get Rid of Soot.

Editor The Clay-Worker:

I see a question on page 569 of the December number of The Clay-Worker asking for a solution to the trouble with soot in the furnace up-draft kiln.

The writer realizes that much trouble can come to the inexperienced coal burner even though he would go to much trouble and expense of burning the first half with coke or wood.

At this time and age it is no longer necessary to burn coke, any ordinary grade of bituminous coal can be used from the start. It will, however, be necessary to equip yourself with a shooting iron and to use it freely as long and as often as the fires become dull and the fire and smoke shows inclination to back out of the doors.

Shooting a kiln is simple, harmless and inexpensive. The writer uses a specially made gun which does the work perfectly. A charge of powder as used is equal to about one teaspoon full of gun powder mixed with about a tablespoon full of blasting powder and will make a report equal to a charge from a shotgun.

Burning kilns with soft coal throughout is an old art, there is nothing difficult or uncertain about keeping the draft perfectly clear, what can be done in one case can be done in all and any manufacturer who will not take advantage of a cheaper fuel will not be acting to his best interest. Fifty tons of good quality soft coal will often be sufficient to burn 200 M brick complete.

I think that money spent for hiring a competent coal burner to assist in burning a trial kiln will be money wisely invested.

Oak Harbor, Ohio.

F. W. GLECKLER.

SHIPMENT OF BRICK TO SOUTH AMERICA.

The Corry (Pa.) Brick and Tile Company has just completed the shipment of twelve cars of chemical bricks and shapes to Buenos Aires, Argentina. The shipment was to the New York Steel Exchange, Inc., contractors, to be used in the erection of an acid plant in the South American city. It marked the third foreign shipment for the Corry industry, two shipments being made to Roumania during the past year. D. Warren Derosay, general manager, writes the outlook for 1923 is very good, just at present they are shipping two orders for school buildings which will require 500,000 face brick, one for Buffalo, N. Y., and the other for Erie, Pa., at \$22.00 per thousand. They are at present installing a new pug mill from the shops of E. M. Freese & Co., Galion, Pa.

A NEW TENNESSEE BRICK COMPANY.

A \$250,000 brick plant is to be located at Knoxville, Tenn., by the Cherokee Brick Company, which was recently organized. A tract of 20 acres of land has been bought near the city, part of the material has been purchased, and a spur track run into the property from the Southern Railway. By spring it is hoped to have kilns in operation with a capacity of 40,000 daily. Both face and common brick will be produced and the most modern labor saving equipment will be installed. The officers of the company are: J. Albert Robbins, President; E. C. Campbell, Vice-President; E. C. Wright, Secretary and Treasurer.

EXPANSION OF A. F. & M. PLANT.

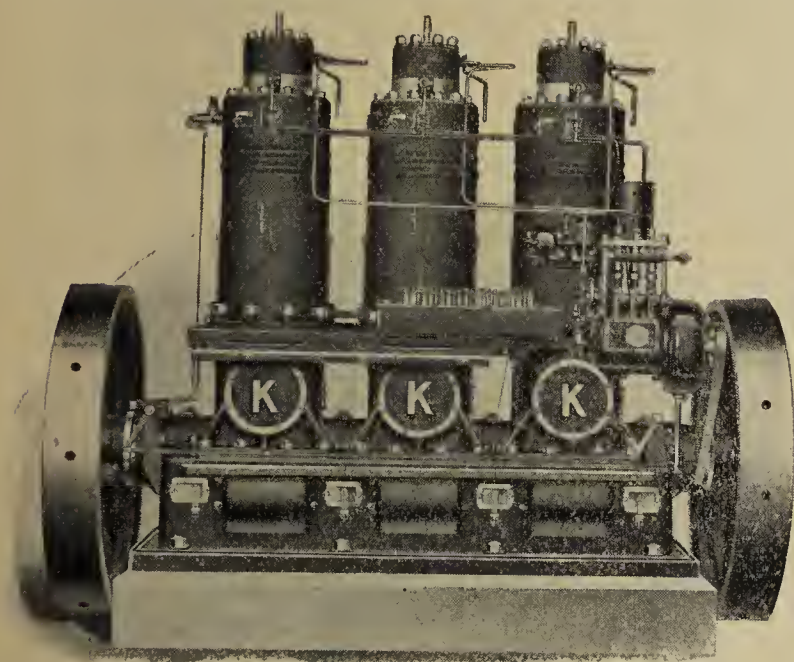
A LARGE PROGRAM is in progress at the present time towards the expansion of the present plant of the Anderson Foundry & Machine Company, Anderson, Indiana, well known to our readers as manufacturers of the old reliable Berg Brick Press.

The A. F. & M. Company for the past few years has directed its attention to the development of a high class solid injection oil engine to operate on low priced fuels, and which engine is showing remarkable results.

The present Model "K" is manufactured in three cylinder sizes, namely; 10, 12½ and 14 inch. They are made up in one, two, three, four and six cylinder engines, ranging in sizes from 20 to 325 horse-power.

During the month of November alone the A. F. & M. Company received orders for fifty-nine large engines aggregating between five thousand and six thousand horse-power, yet November is usually considered their dullest month from a business standpoint.

The present plans call for buildings and equipment that, aside from their brick machinery business, will enable them



Three Cylinder 135 H. P. Type "K" Engine.

to produce and ship 6,000 horse-power in Type "K" engines every month.

The engine is adapted to various uses, such as electric generating plants, water works, ice plants, cotton gins, sand barges, flour mills, elevators, and has also become very popular in clayworking plants.

The A. F. & M. Company guarantee that the engine will develop rated horse-power at a less cost than any other type of prime mover. The fuel cost for one hundred horse-power for one hour averaging approximately 35c or \$3.50 for one hundred continuous horse-power for ten hours.

TAKES OVER SOFT MUD MACHINERY BUSINESS.

Following the death of C. H. Horton of the Horton Company, manufacturers of soft mud machinery and appliances at Painesville, Ohio, Frank McClellan for many years associated with Mr. Horton has taken over the business and is ready to look after the trade. Mr. McClellan is at present located at 14621 Ardenall Ave., East Cleveland, Ohio.

"WATCH CINCINNATI IN 1923!"



THE ABOVE heading is the slogan of A. E. Otte, Jr., who will be re-elected secretary of the Associated Industries of Cincinnati for this year.

And Otte doesn't stand alone either. Every builder has the same message.

"Building will continue undiminished or increasing for at least five years," says Walter Schmidt, president of the Frederick A. Schmidt Co., large builders of this city. "Cincinnati really needs many big improvements, especially in the downtown district."

And then listen to what J. Stacy Hill, president of the Gibson Hotel Company, which is now erecting a large brick addition, has to say: "Cincinnati has ahead of it a building boom of large proportions."

Others interested in pushing Cincinnati's building program have opinion of similar nature. Industry, improvement, progress! Never has there been anything in Cincinnati's past to compare with it!

Industrially, commercially and socially Cincinnati has profited by 1922. The residential districts have changed, new factories have sprung up in the manufacturing areas and the skyline of the downtown district has changed materially.

"The past year will go down in history as the greatest realty and building year in the annals of the Queen City," says A. H. Brown, president of the Cincinnati real estate board. "Many of the city's famous landmarks are vanishing, but in this era of progress they must give way to modern structures in keeping with our city's rapid growth and development. Our building boom is just getting in full swing. Nearly \$30,000,000 has been spent on new buildings last year with about \$50,000,000 to be spent in 1923, which will be another record-breaking year in the building industry."

According to George R. Hauser, building commissioner, activities in 1922 exceeded by more than \$11,000,000 records of previous years.

At the close of last year 18,876 permits had been issued for a total valuation of \$28,729,795. During the month of December alone 1,246 permits were issued for a total valuation of \$1,530,000.

Eight hundred and twenty-three brick residences costing \$6,098,155 were erected in 1922 against frame dwelling which cost \$5,619,670. Permits for private garages, the majority of them constructed of brick, totaled 2,041 for a cost of \$816,855; 32 public garages for \$387,330; four churches for \$172,800; one theater, \$50,000; 41 store buildings, \$1,629,705; five apartment and store buildings, \$650,000; 11 apartment houses, \$447,500; 12 schools, \$1,129,850; one asylum addition, \$329,000; two club buildings, \$1,412,000; one hospital, \$330,000; 19 gasoline filling stations, \$54,810; 13 auto service stations, \$32,550; two gymnasium buildings, \$110,000; 32 warehouses, \$416,250; three banks, \$505,000, and 20 office buildings, \$1,502,800.

The Builders' Supply Company reports that because of the large demand for brick they had to use every possible means to have it shipped here. The Ohio Builders' Supply Company in order to speed its brick shipments erected two new barges for use on the Ohio River. CINCY.

DEATH OF MRS. J. W. ROBB.

It is with sincere regret we record the death of Mrs. J. W. Robb, the wife of J. W. Robb, ex-President of the National Brick Manufacturers' Association, which occurred at her home in Clinton, Ind., Christmas Day, following a stroke of apoplexy the day before, while she was teaching a Sunday School class. Mrs. Robb had attended many of the N. B. M. A. conventions and had innumerable friends among the ladies who attend regularly, who will miss her in future gatherings.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. January, 1923. No. 1

CURRENT COMMENT.

When you buy your ticket to Cleveland Take a Certificate.

* * *

The big pow-wow is at Cleveland, February 5-9, inclusive.

* * *

Your first new resolution should indicate that you are going to be at the annual gathering.

* * *

The Canadian Clay Products Association is among the early ones under the line with association activities in the new year.

* * *

In addition to the big annuals there will be a number of interesting state gatherings during the winter and spring months and these should certainly be attended by those living in the territory.

* * *

Those who attend the N. B. M. A. gatherings never have cause for regret. It is those who stay at home who gather in the regrets instead of the information and inspiration which comes from attending these gatherings.

* * *

Most of the color variety in brick comes from getting into the higher temperatures which bring out the colors, and the better regulation and control of temperature that we have the easier it will be to maintain uniformity and to get out of each burn exactly the colors desired.

* * *

We are told that there are practically twice as many coal mines and miners as are needed to supply our needs, yet we find coal scarce and prices double what they should be. If

a thing like that happened in any other industry there would be indictments and prosecution.

* * *

The coal situation persists in continuing in an uncertain and aggravating shape and to add high cost and uncertainty to brick burning.

* * *

It has not only been a problem to get coal this winter but often the quality of the coal obtained has been such as to create another problem within itself.

* * *

From what plans have already been announced there is plenty in sight to keep the building boom going through six months of the new year and probably for several years.

* * *

If you are not fully satisfied with what your association is doing for you, the first thing to do is to ask yourself the question of whether or not you are doing your part by your association.

* * *

With better conditions financially in the agricultural districts there should be a getting away from that penny pinching in drain tile and a return to some of the larger sizes that were in favor in prewar days.

* * *

It is probable that railway service for deliveries will be more satisfactory in the spring months, but meantime there will be interest in and extension of local truck deliveries which if properly handled will help out considerably.

* * *

The handicap to brick construction which comes from the high cost of laying brick in the wall is not merely a matter of high wages to bricklayers, but there is complaint that even at the higher wages many of them lay fewer brick than in prewar days. We hope these cases are exceptional and not the rule because the present rate of pay for brick laying justifies real service.

CAR MOVEMENT DATA.

We are being furnished some interesting data on the comparative carloading per year of different commodities and it seems a good time to go further into this and get more of it. We have data on lumber and forest products, for example, showing nearly three million cars in a year, coal shows practically seven million cars, grain and grain products two and a half million, live stock one and a half million, and so on, but in the list does not appear brick and clay products, nor the total of cement products. It is true we have geological survey reports of production on these which could be reduced to carload units, but that is not a true guide to the actual shipping of these products done. It will help some if those compiling data in the industry can furnish some positive figures on the number of carloads of clay products moved by rail during the year, and an estimate of the average distance moved.

FACE BRICK PROGRESS.

In a recent survey of current business by the Department of Commerce there are some interesting figures pertaining to the brick business as well as to other lines of building material. It is shown for example that the sales and movement in face brick in one month during the early winter were considerably more than in the same month last year. This shows that face brick is making splendid progress. Indeed, compared with cement and other items listed face brick shows more distinct progress during the year than any other

item except oak flooring. It is an interesting fact, too, that oak flooring is quite a common adjunct to the brick home. In other words, it is another manifestation of the inclination on the part of the building public to build better homes, even though they cost a little more money, because they are worth more and they last longer. Enough progress has been made during the past year to furnish enthusiasm and zest to the face brick industry to push things during 1923.

BRICKLAYERS AND LONGEVITY.

There is good news for those advocates of training more young men in the art of bricklaying. The statistics compiled by the U. S. Department of Labor show that masons and bricklayers are among the men who live longest, therefore it must be a healthy and wholesome calling. Only blacksmiths, farmers and farm laborers live longer than bricklayers, according to the figures, which indicate that the bricklayers are longer lived than almost any other skilled workers.

SCHOOL BUILDING SAFETY.

Quite a strong feature was made in a recent bulletin publication of the National Board of Fire Underwriters of fires in school buildings, and a strong plea was put up to make the school-house safe. This is an appeal, too, that should go home to the heart of every citizen, because the safety of school children is one of the essentials to the future safety of the race. Therefore, whatever chance may be taken in other forms of building we should not make fire-traps of school houses, but should build them of fire safe material. Of course, the more brick, hollow building tile and other clay products that are used in school building the less will be the danger of fire.

TAXES AND HOME BUILDING.

There have been many theories and a fair number of experiments around the idea of encouraging home building by in some manner or other making the tax burden lighter on the home builder. It may be argued in favor of this that the home builder is a more worthy citizen, therefore should be favored, but there have been so many tax exemption and schemes to dodge taxes that the general feeling today is one of getting away from this and getting things arranged so that everyone will pay his fair share of all taxes called for.

Experiments at tax exemption for home builders through a limited period are in line with exempting new industries coming to a community through taxes for a given number of years. The arguments in favor of this are based mainly on the idea that it relieves the financial burden through the first few years of paying for a home and this is encouraging and helpful.

In opposition to this it may be said that exempting a new home builder in taxes is unfair to those who have been thrifty and have already built homes, because they will have to carry the tax burden for those who are exempt. Also it is a sort of artificial stimulant that should be avoided.

We not only have this question here, but our English cousins have it also, as William Higgins & Son, brick manufacturers, of Manchester, are seeking information and send us clippings of arguments advanced for and against tax exemptions to encourage housing. In reply to all these things it may be said that there is a burden of taxes someone must carry and the more we make of favored classes and exemptions the more trouble we cause and the harder becomes the burden on others. On the whole the home builder should

carry his share of taxes as well as others, and the man who can only be induced to build or buy a home through special exemption of this kind is not possessed of the right home spirit, nor is he thoroughly sold on the home building idea.

The home owner becomes a citizen and should be ready and willing to assume the responsibilities of citizenship, one of which is to pay his fair share of taxes. The sooner we put it this way, the sooner we put this tax exemption behind us, and get busy with the work of promoting home building and owning on its merits, the sooner we will be on the right road.

FARM PROSPERITY.

Farmers have had more than their share of burdens the past three years and it is good to see them getting out from under and getting on a better footing. It is not only good to see them coming through their troubles better today but incidentally it means better prosperity for the country as a whole. Two factors in addition to the natural resourcefulness and dependability of the farmers have helped to improve conditions. One is organization and co-operative marketing, and the other is in that there has been during the first half of the winter a good volume of export trade in farm products which has undoubtedly helped out considerably. Our export trade on the whole would be in bad shape but for the fact that other countries must have foodstuff, and therefore have managed to buy in considerable quantities this winter, which has not only helped out our export trade, but has also helped bring prosperity to the agricultural districts. This speaks well not only for probable building operations in the future but also makes an opportunity to push farm drain tile during the spring.

LIMITING TRADE INQUIRY.

One of the first acts of the District of Columbia Court of Appeals in the new year was to affirm a decision of the Supreme Court of the District which enjoined the Federal Trade Commission from requiring the Claire Furnace Co. and other firms to submit monthly reports of production, costs, balance sheets, and other trade secrets. This decision means that there are limits beyond which even the Federal Trade Commission may not go in making inquiry into the private affairs of business. Out of it all will come some interesting questions of what should be the limit of such inquiry and reports, and what should be regarded as privacy and trade secrets in the business world. The object of inquiry of this kind is in the main benign, that is to serve both industry and the public, and there is no question but what the more information we can have of this kind the easier it will be to stabilize business. There enters, however, a question of privacy and of trade secrets, and it is going to be an interesting problem to decide where the line of inquiry should be drawn or limited. This is one of the questions we will probably hear a lot of during the next year or two.

BUILDING COST AND FIRE LOSS.

A pamphlet issued by the Insurance Department of the Chamber of Commerce of the United States gives some interesting figures on fire waste and some comparison of these with the annual total building operations. These figures show that counting the direct and indirect cost of fire the total annual loss chargeable to this account runs close to seven hundred and fifty million a year, which is probably

half or more than half of the total amount expended during the year in new building operations. The cost of fire includes not only the actual losses by fire on which insurance is paid, which runs to about three hundred million a year, but also the expense of conducting the fire insurance business in all its forms, and then to this is added the cost of equipping and maintaining fire departments and other agencies for the control of fire. It plainly means that if we could reduce our fire losses to a minimum we would not only have more money to build with, but more of our building would keep standing and the country as a whole would be much better off. Incidentally it is mentioned that the total amount of fire insurance carried in the country is practically a hundred billion dollars. So it is easy to see that the item of insurance alone is a big one and if we can reduce the fire hazard to any extent we can produce a saving in insurance alone.

CONVENTION HEADQUARTERS.

The Manufacturers Equipment Company, Dayton, Ohio, whose ad appears on pages 12 and 13 of this issue will be well represented at the National Convention at Cleveland the week of February 5. They will have headquarters in rooms 250 and 251 at the Winton Hotel and will keep open house for friends and visitors all week.

E. M. FREESE & CO. REPRESENTATIVE ON PACIFIC COAST.

J. J. Gledhill, formerly associated with E. M. Freese & Company, Galion, Ohio, but who has been looking after his own personal interests in the West for some time, has again become a member of the Freese & Company sales force. He is located at 308 Bush St., San Francisco, Cal., and will devote all of his time to the interests of E. M. Freese & Company in the Pacific Coast territory. Mr. Gledhill is an experienced machinery man, reliable and trustworthy and will no doubt render valuable service both to his employers and the users of "Dependable Machinery of Proven Efficiency," well illustrated on pages 97, 98, 99 and 100 of this issue. Unfortunately Mr. Gledhill will not be able to join the Freese & Co. forces who will hold forth at Hotel Winton convention week in Rooms 218, 220 and 222.

SCHURS OIL BURNERS POPULAR ON THE COAST AND ELSEWHERE.

While in Los Angeles recently, The Clay-Worker scribe, through the courtesy of Mr. Eugene Parker, the production manager of the Los Angeles Press Brick Company, was motored out to the office of the Schurs Oil Burner Company and found Mr. B. C. Berg, the president of the company in charge, and when asked if they were busy replied, "As busy as can be." Mr. Berg had just returned from a trip north along the Coast and found ninety per cent of all the brick plants in that section burning with oil, using the Schurs burner. Every one of the twenty-nine plants he visited personally were using the Schurs equipment. However, it is not alone on the Pacific Coast the Schurs burner is known, but in all parts of the country brick manufacturers are using them with great satisfaction. Not long since the Mason City (Iowa) Brick & Tile Company changed from coal to oil for fuel, installing 500 Schurs burners, and have expressed themselves as well pleased with their investment.

Mr. John Schurs, the inventor of the Schurs Oil Burner, is an old-time brick man, making his first experiments in burning with oil twenty-seven years ago in Illinois. He goes

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FOR SALE.

Brick and tile plant. Best clay and best market in Middle West. A money making bargain.

HAWKEYE CLAY WORKS,

11 cm

Fort Dodge, Iowa.

into every detail of the burning with prospective customer, and gives comparative costs of burning with oil and coal before an installation is made. In this way, as Mr. Berg says, there is no come back, and every user of the Schurs burners is a satisfied user.

HOLIDAY GREETINGS AND SOUVENIRS.

The heart of the Editor of The Clay-Worker was warmed by the innumerable friendly greetings received during the holiday season which brought cordial good wishes from personal friends from all sections of the country, for all of which we are duly grateful. From some we received appreciated souvenirs. Among the latter, and the first to be received, was a very nice match holder and ash tray from the Clippert Brick Company, of Detroit, Mich., also an attractive leather bound memoranda book from the Bonnot Company, Canton, Ohio, an artistic calendar from F. W. Fitzpatrick, Chicago, another from H. A. Wheeler of St. Louis, and the sanctum walls are now decorated with business calendars, large and small. The largest and most pretentious is that of the Medal Paving Brick Company, Cleveland, Ohio. Others from E. M. Freese & Company, Galion, Ohio, Geijsbeek Engineering Company, Seattle, Wash., Coral Ridge Clay Products Company, Louisville, Ky., C. K. Williams & Company, Easton, Pa., and the Universal Portland Cement Company, New York. Artistically, the most unique in design was the New Year greeting from the Maruzen Company, Ltd., Tokio, Japan.

SECURE GREATER PRODUCTION---LOWER OPERATING COSTS By Using MARION CLAY PLANT EQUIPMENT

RUST CLAY FEEDER AND MIXER

Its successful performance over a period of years has gained it a high reputation in the brick and clay industries.

The benefits accruing to you by using a **RUST CLAY FEEDER AND MIXER**, are:

Increased Production	
Quality Output	Eliminating Labor
Cutting Costs	Greater Profits



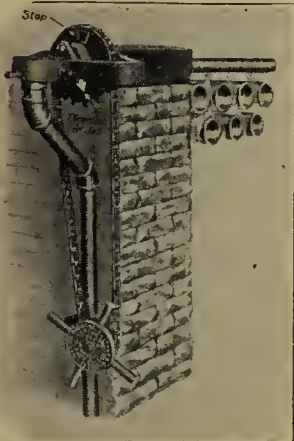
MARION PORTABLE KILN GRATES

will give you:

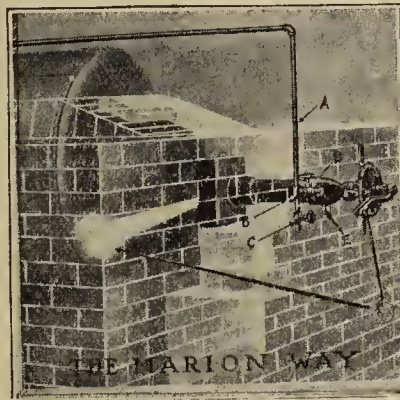
Maximum Heats	Even Temperatures
Greater Kiln Capacity	Better Burns

Catalog No. 110 fully describes "THE MARION LINE" of Clayworking Machinery. We'll be glad to send it to you.

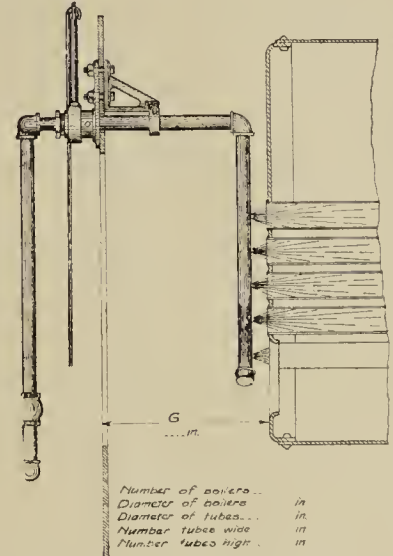
MARION STEAM SOOT BLOWERS



The Marion
Planet Blower



The Marion Rotary
Rear End Type Blower

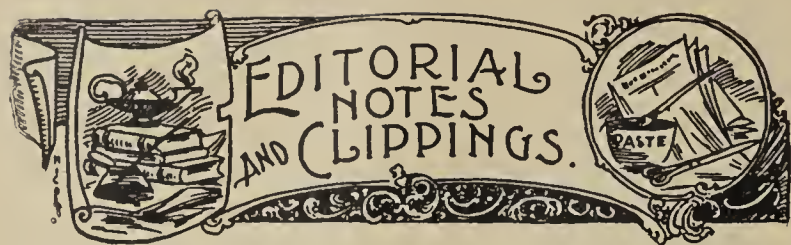


The Marion Duplex
Front End Type Blower

In the Marion Line you may find a soot blower for all kinds and types of boilers. The Marion Planet is specially suited for water tube boilers. The Marion Duplex Front End Type, and the Marion Rotary Rear End Type, are better suited to fire tube, or tubular boilers.

CATALOGS CHEERFULLY, ON REQUEST.

Marion Machine Foundry & Supply Co.
P. O. Box 156
Marion, Indiana



The plant of the Ohio Refractories Company, at Ironton, Ohio, which was recently damaged by fire is being rebuilt.

John A. Burchan, 9753 Grandriver Avenue, Detroit, Mich., advises us he is in the market for machinery for making flower pots.

The Wadsworth Brick & Tile Company, Wadsworth, Ohio, is running to capacity. They booked orders in the month of December for 5,000,000 brick.

American Refractories Company of Pittsburgh has acquired property at Lewiston Junction, Pa., and plans development of the site for refractory manufacture.

Fire of unknown origin starting in the top of the machinery building of the Globe Pressed Brick Company, Dallas, Texas, destroyed part of the building. The estimated loss is \$4,000.

Shawe Brothers will move their brickmaking plant from Garth, to Kipling, Mich., where they have purchased a tract of clay land. When completed the plant will have a capacity of 25,000 brick per day.

Colonial Brick Company, of Winchester, Va., has been authorized by the stockholders to proceed at once with a plan of increasing the company's capital stock in order to improve and increase the concern's capacity.

Fire resulting from an overheated kiln at the plant of the Oscar Zimbal Brick Co., at Sheboygan, Wis., caused a damage amounting to about \$500.00. Fortunately the flames did not spread to the other part of the plant, being confined entirely to the kiln roof.

The Dayton Brick Company is the name of a concern recently incorporated at Dayton, Ohio, with \$200,000 capital stock. The officers are Parker S. Bookwalter, president; F. J. Roth, treasurer; E. R. Sycks, secretary; John H. Mulford, Hugh E. Wall, E. J. Timmerman and Lincoln J. Davis.

O. L. Benson of Andalusia, Ala., has purchased an interest in the brick plant at River Falls, Ala., and the name of the company will be changed to the Andalusia Brick Company, with headquarters at Andalusia. Extensive improvements will be made in the plant with a view of increasing the capacity.

Sumter Brick Works, manufacturers of "Dixie Texture Brick," Sumter, S. C., report that they have this year broken all records for shipments of their products to points northward of the Mason and Dixon Line, having sent bricks to Atlantic City, Boston, Montreal, Detroit, Milwaukee and Rochester, the latter city in Minnesota.

Lewis P. Fisher, general manager of the Fisher Coal Company, Cantrall, Ill., writes they have at that point in addition to coals, splendid deposits of surface clays, shales, fire clays, good water supply, together with power site ground and transportation, and they would like to correspond with parties desiring a good location for a modern clayworking plant.

The Chicago-Danville Company is the name of a new \$3,000,000 concern recently incorporated to manufacture brick at Danville, Ill. It is now expected ground for the plant will be broken the latter part of March or in early April. An option has been taken by the company on three hundred and fifty acres of shale and coal land near Plant No. 3 of the Western Brick Company, and it is their plan to erect a brick-

making plant that will be the last word so far as machinery and equipment is concerned.

C. Gmeiner, of Waupaca, Wis., writes that he wants to buy a smooth roll crusher of 2,500 brick per hour capacity, either new or second hand.

Willis Boyer, an employe of the Hydraulic Press Brick Company, at Reynoldsville, Pa., was badly injured recently when caught under a fall of shale in the clay pit.

The plant of the Georgia Brick Company, at Athens, Ga., suffered a \$40,000 loss by fire recently. H. H. Hint and R. C. Wilson own the plant which will in all probability be rebuilt.

The Jointless Fire Brick Co., 1130 Clay St., Chicago, Ill., has purchased about two acres at Trenton, N. J., as a site for the erection of a fire brick and refractory plant, estimated to cost \$75,000.

At a cost of probably \$35,000 additions are to be built at the plant of the Camden Pottery Company, at Camden, N. J., consisting of two kilns and a casting shop, 65 by 140 feet, two stories high. Work on the addition will begin within a few weeks, it is reported.

The Hall-Spiers Brick Co., of Berlin, Conn., has recently been reorganized and incorporated under the above name. A number of improvements will be made in the plant. They have installed an oil burning equipment, and will use that fuel in the future for burning their brick.

Adam J. Wolz of A. J. Wolz & Son, Eustis, Fla., writes they have just burned their first kiln of brick, which was quite a success, but thinks they will be able to make a marked improvement on the next kiln. They are in the market for additional clayworking machinery.

Charles Stolp, one time factory manager of the Ludowici-Celadon Company of Chicago, Ill., and a pioneer in the introduction of the terra cotta roofing tile in the United States, died at the home of his daughter in Washington, D. C., on December 10th., at the age of seventy-five. He was a native of Holland and came to this country with his family in 1889.

Improvements costing between \$40,000 and \$50,000 are contemplated at the Richards Brick Company plant, Edwardsville, Illinois, as part of a policy to maintain a modern plant. The proposed changes are designed to replace some of the old equipment—including several kilns used for a number of years and which have about served their usefulness. The modern continuous kiln is to be extended and the change will permit an increase of 20 to 25 per cent in the production.

It is expected to have the work completed before spring so the plant will be in good shape for steady production. The company now has on its books orders for points in Illinois, Ohio, Minnesota, Wisconsin and Nebraska. Ben H. Richards,

(Continued on page 68)

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Arcade.

Hazleton, Pa., Office
705 Markle Bank Bldg.

Protect Costly Kilns with Tecktonius Fasteners

BEST by any **Test**, any **Comparison**, any **Investigation** you care to make.

You can prove to your own satisfaction that TECKTONIUS Fasteners are recognized for their **Strength, Simplicity, Economy, and Durability**.

TECKTONIUS Fasteners grip bands and plates with a **never-failing** wedge action. They are **stronger** than the best rivet job. They are **stronger** than the band itself.

Anderson, Ind.

We have been using your Kiln Band Fasteners for a great many years and have in use 476 of these Fasteners. They have always given entire satisfaction and we expect to place an order shortly for about 100 more of them.

THE NATIONAL TILE COMPANY,
Harry Haugh, Secretary.

South River, N. J.

We have used the Tecktonius Kiln Band Fastener and found it to be the best of its type on the market. It is especially useful when a band breaks while the kiln is in fire; the Tecktonius Fastener can be applied in a few minutes.

AMERICAN ENAMELED BRICK
& TILE CO.,
Chas. E. Jacquart, Sup't.

McKeesport, Pa.

We have ten down draft kilns, some 36-ft. and 41-ft. in diameter, all equipped with Tecktonius Kiln Band Fasteners. We have been using your fasteners for ten years and do not believe that we could find any better.

LAYTON FIRE CLAY COMPANY,
C. H. Pack.

Brookville, Pa.

We are using the Tecktonius Lug on the majority of our 18 kilns and consider them the most convenient and satisfactory method of handling the Kiln Band problem that we have come into contact with. Some of our lugs have been in use over fifteen years and have never had a failure or slip of any kind.

THE HUMPHREY BRICK
& TILE CO.,
L. B. Humphrey.

Springfield, Ill.

We wish to thank you for the attention you gave us on our last order for Kiln Band Fasteners. We have been using your Fasteners for the past fifteen years and the writer has yet to see one of them break or loosen under strain. They are successful in every way and we have recommended their use.

POSTON BRICK
COMPANY,
E. V. Poston, Manager.

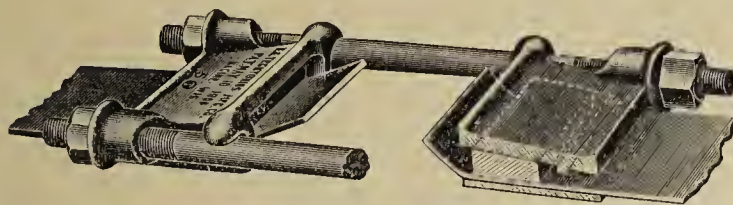
Wellsville, Mo.

We have been using your Kiln Band Fasteners for a number of years and have found them entirely satisfactory in every way. They are conveniently adjusted to the bands and furthermore we have never found any of them which failed to hold all the pressure we could put upon them.

They have been very satisfactory and we are pleased to recommend them to anyone.

WELLSVILLE FIRE
BRICK CO.,
H. G. Kiger, Manager.

The Famous TECKTONIUS Rivetless Fastener



Read marginal letters from users. They tell a story of **ECONOMY, CONVENIENCE, and DURABILITY** that cannot fail to make the careful manufacturer a TECKTONIUS Fastener user.

**MORE THAN 500 CLAYWORKERS USE
TECKTONIUS FASTENERS**

Send for Catalog and Price List by return mail.

Mexico, Mo.

We have been using the Tecktonius Kiln Band Fasteners since our plant was originally built and have found them very satisfactory. The best we can say for them is we shall always equip with Tecktonius.

A. F. GREEN FIRE
BRICK COMPANY,
J. B. Arthur,
Vice-Pres. & Gen'l. Mgr.

Monroe, Wisconsin.

We are very well pleased with your kiln bands and fasteners. They are very easily put on and it can be done without the aid of a mechanic and we find that they hold very well.

MONROE BRICK WORKS,
R. Schober.

Paducah, Kentucky.

The Kiln Band Fasteners which we purchased from you at least twenty years ago are still in good condition on our kilns and have never failed to do their duty.

If in need of more fasteners, we certainly would order them from your company.

PADUCAH POTTERY
COMPANY, Inc.,
M. H. Riddell.

Clearfield, Pa.

We have used your Kiln Band Fasteners since the year 1914 and have found them satisfactory in every particular.

PATERSON FIRE
BRICK CO.,
R. B. Paterson.

Mecca, Ind.

Relative to the Tecktonius Kiln Band Fastener, wish to say: We have found it so satisfactory that for the last fifteen years we have used none but the Tecktonius.

WM. E. DEE CLAY
MFG. CO.,
J. J. Kearns.

Kansas City, Mo.

We have used Tecktonius Kiln Band Fasteners on our kilns at this plant for eight years. We have had absolutely no trouble with them and can honestly recommend them to anyone requiring fasteners.

K. C. TERRA COTTA
& FAIENCE CO.,
Jas. J. Parsons, Manager.

E. C. TECKTONIUS MFG. CO.

RACINE JUNCTION, WISCONSIN

Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terracotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

The book also contains a supplement on the subject of Crazing, Its Cause and Prevention.

Price \$5.00

T. A. Randall & Co.

Publishers Indianapolis, Ind.

EDITORIAL NOTES AND CLIPPINGS.

(Continued from Page 66)

the general manager of the company, has grown up in the brick business and is thoroughly conversant with every detail of plant operation and management.

With a capital stock of \$300,000 the Palatka Clay Products Company, of Palatka, Florida, has been formed to dig and mine clay for ceramic purposes.

Sulphin & Snell, of Graham, Va., desire prices and catalogues of brickmaking machinery and supplies for a shale brick plant of 50,000 daily capacity.

Harry Gildmeister, an employe at the plant of the American Brick and Tile Co., Mason City, Iowa, was killed last month when caught by a slide in the clay bank.

The Lucas Brick Co., was recently incorporated at Portland, Me., with \$100,000 capital stock. The officers are Moses W., Brighton C. and Mabel Lucas, all of Portland.

Reed P. Black, Charles H. Smith and Leo Fanz have incorporated the Southern Brick Works at Knoxville, Tenn., with \$250,000 capital stock, to manufacture brick.

The Coates Brick & Tile Company, of Kansas City, Mo., has been incorporated by S. J. Moorman, W. W. Coates and A. O. Kickels. The company is capitalized at \$15,000.

William Seale writes that he contemplates building a brickmaking plant at Beaumont, Texas, and would accordingly like to get in touch with manufacturers of brickmaking machinery and supplies.

Fire which originated in the hoisting room of the Briggs Brick and Tile Company's plant at Grand Ledge, Mich., destroyed two buildings causing a loss of \$15,000, which was covered by insurance. The plant will at once be rebuilt.

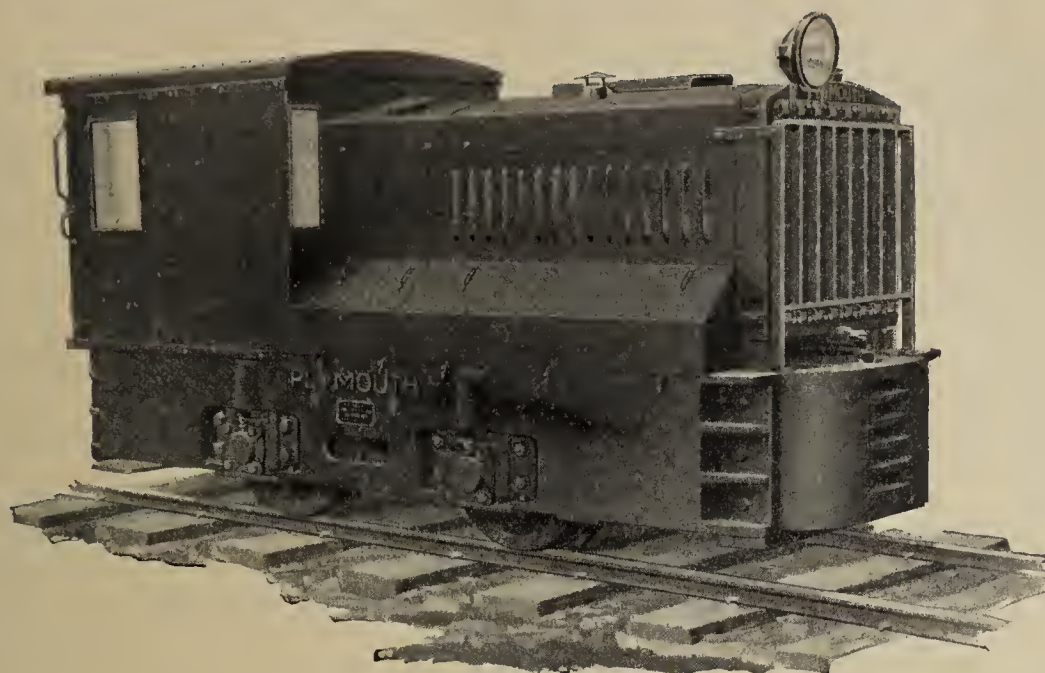
Everett & Co., write they have an excellent site at Bennettsville, S. C., for a modern clayworking plant. In addition to an unlimited supply for a fine quality of clay, the site is located on a railroad which would give good shipping facilities.

The Northwestern Terra Cotta Co., of Chicago, Ill., an old and well established concern has changed its name to the Chicago Ceramic Co. If the company attains as much prestige under the new title as it did under the old, its future is assured.

The four hundred employes of the Western Brick Co., Danville, Ill., received a very acceptable Christmas gift in the form of a raise in wages effective the first of January. The company anticipates a busy and prosperous season in 1923, and the raise in wages is in keeping with the policy of the company.

W. C. Mitchell, general manager of the Superior Press Brick Company, out at 3190 South Kingshighway, St. Louis, Mo., is just out of the hospital where he was laid up for several weeks with concussion of the brain and a fractured skull, as a result of being beaten by two disgruntled discharged workmen. Mr. Mitchell writes if he had not been composed of a good quality of brick clay, they could probably have done for him, but it is a difficult proposition to put a really good brick out of commission entirely, and he is now looking forward to a busy week at Cleveland during the National Convention.

The Lewiston Brick & Tile Company, Lewiston, Montana, which has only been operating for eleven years has made for itself an enviable name in that territory. All the stock in the company is owned by local people and this gives them prestige right at home. The plant is equipped throughout with electrically driven machinery of the Hadfield-Penfield make, and they turn out both a smooth and a rough texture brick and a good grade of hollow building tile, for which they have found a good demand not only in Montana and Wyoming, but the company now has on its books orders for carloads of brick to Chehalis and Kelso, Wash., and Portland, Ore. The officers of the company are president, George Weidman; vice-president, J. E. Lane; treasurer, O. W. Belden; secretary, W. E. Montgomery; general manager, John Gretencort. In an article in a recent issue of a local paper, Mr. Gretencort, a former Indiana man, is given much of the credit for the success of the company. The plant was built under his supervision and while keeping close tab on the manufacturing end of the business, he also has charge of the sales end.



Announcing the Plymouth 4 Speed Gear Drive Gasoline Locomotive

No part of an Industrial Locomotive is of more vital importance than its Transmission. No matter how good or powerful the Engine or Power Plant, all power must be transmitted through the Transmission. It can be either the strongest or weakest link.

When we designed the 7 ton, 4 speed, Plymouth Gear Drive Locomotive we gave the Transmission our first consideration. We have spent **years** in the study and experiment of transmissions. Not until after long, hard and gruelling tests in actual road work—tests that showed this Locomotive would develop and maintain a drawbar pull of 5250 lbs. on sanded rail—were we satisfied with this transmission.

There must be reasons for this remarkable performance. There are.

1. Transmission has exclusive feature of a final driving gear and shaft housed in the gear case compounding the ratio of the other gears.
2. All gears unusually large and massive, final driving gear being 14½" diameter by 4" face. Other gears 2" and 2¼" face of large diameter.
3. All gears made of alloy hardened steel, mounted on extra heavy shafting and ball bearings.
4. Gears that are driving are the only ones in mesh.
5. No Jack Shaft required.
6. No Jaw Clutches.
7. Driving Sprockets on same horizontal plane with axles.
8. Only two short Drive Chains—both extra heavy.
9. All Ball Bearings inside of Gear Case, from which they are lubricated.
10. Clutch has nine driving discs faced on each side with non-burnable facings. Very smooth in action.

Plymouth Gear Drive Locomotives are not an experiment. They have been tried, tested and proved. They are at work in road construction, quarries, sand and gravel pits and industrial plants—and the numerous repeat orders attest the exceptional service.

See the Plymouth Gear Drive at the Good Roads Show, Chicago—or write for literature.

THE FATE-ROOT-HEATH CO. Plymouth, Ohio

Arch Protectors for Updraft Kilns

Stop, Listen and Meditate. Gleckler's method of protecting arches and spreading heat will eliminate 95 per cent of your arch waste and will leave your arch brick with dark cherry-red ends facing the arch and straight and solid as when put into the kiln. I claim in truth that this can be done and will be highly pleased to have any or all interested brick manufacturers come in and investigate its merits.

The future of your arches depends altogether upon you. You can stop arch waste and increase your profits or you can continue the old way and dump much of your profits into the junk hole.

Listen, Brother; if you persist in wasting your best hard brick and suffer your own loss, it will be nobody's business, but when you turn a deaf ear to reason and continue to force the sale of culls for full price, as we have all been compelled to do before arch protectors were discovered, then it is no longer an honest deal. A brickmaker, like a drowning man, will grasp at a straw and say that culls are just as good, but you will never make the consumer believe it.

What does this System consist of and what is the expense? Will say that it is a strictly home-made Patented contrivance, built up of some forty fire brick per kiln eye. It also consists of accurate knowledge of the art of burning furnace up-draft kilns. This knowledge can be applied to all up-draft kilns, whether my system is used or not, and can not get out of order, lost or returned.

The price is again \$100.00 for permanent yard right; \$25.00 must accompany the order for a season's trial and as a guarantee that you will pay the balance in due time after it proves O. K.

You don't believe in paying anything down before you see it? Well, if you are skeptical I will be much ahead to save time and paper rather than to waste it telling all I know for nothing. The details themselves will not look any better on paper than this proposition does, and you would never know any more before you have tried it than you know now. Every successful Doctor, Lawyer or Professor will charge a stranger cash for knowledge, whether it ever does him any good or not. I can at least guarantee that it will do the work perfectly if properly handled.

This is a 50-50 proposition; you need the help and I will look forward to your final success. Let us work together and become better acquainted.

If you are interested, then write to

Yours for Success

F. W. GLECKLER

Oak Harbor, Ohio

STANDARDIZED COSTS FOR CLAYWORKERS.

(Continued from page 37)

keeping system would be designed that would suit the whole world. This system would be so perfect that no improvement could be made on it. But actually every business is different. There are special local conditions that keep one business from being exactly like another. For this reason it is absolutely essential that each clayworker shall follow some sort of a standard that will bring him to a level with the rest of his competitors. There is no business, no matter how unique, that cannot be systematized in a practical way.

Another popular reason for refusing the assistance of a professional cost engineer is the fact that there is already some sort of a cost system in existence. It is perfectly true that some of the large clayworkers throughout the country have made an investigation of the subject of cost keeping and have installed complete cost keeping systems in their plants. But in most cases, where any system exists at all, it is of the crudest and most inefficient sort. The reports of the Federal Trades Commission show that only 5 per cent of all the manufacturers in the country know what it costs them to do business. The same report indicates that over 70 per cent are making less than the salary of a good executive.

This does not mean that the manufacturer cannot figure his costs. In most industries it is necessary to figure costs in estimating a job. But the methods employed are usually very crude, based entirely on guess work. This is fully proved by the confusion that the government experts found in attempting to collect income taxes from various manufacturers and construction men.

This is not the only reason for improving the cost systems already in use. When the business revival starts in, although there will be a great deal of work to do, it will have to be obtained under the keenest competition, which is likely to last over a great number of years. Some experts maintain at least ten. A clayworker who does not know his costs will soon be forced out of business under such competition. A man who has accumulated a certain sum of money can stay in business for a little while by selling below the cost of production, but he cannot keep this pace up forever. The argument that is most often used to justify faulty business methods, namely, that "I am still in business," will fall short.

Only a highly efficient manufacturer can make money when prices are low. Efficiency means the ratio between what is put into a business and what is taken out. That is, in order to make money when prices are low, the clayworker must get a lot out of what he puts in. The only way he can do this is by eliminating waste from his business. He must reduce to a minimum the idle time on the part of labor. He must see that materials are not wasted. He must keep his indirect or overhead expenses within the limits of absolute necessity. He can do this only by using well-designed cost records. That is the only way he can insure himself against inefficiency—and the inefficient contractor will be put out of business in low price era just as surely as night follows day.

Cost System Necessary in Bad Times.

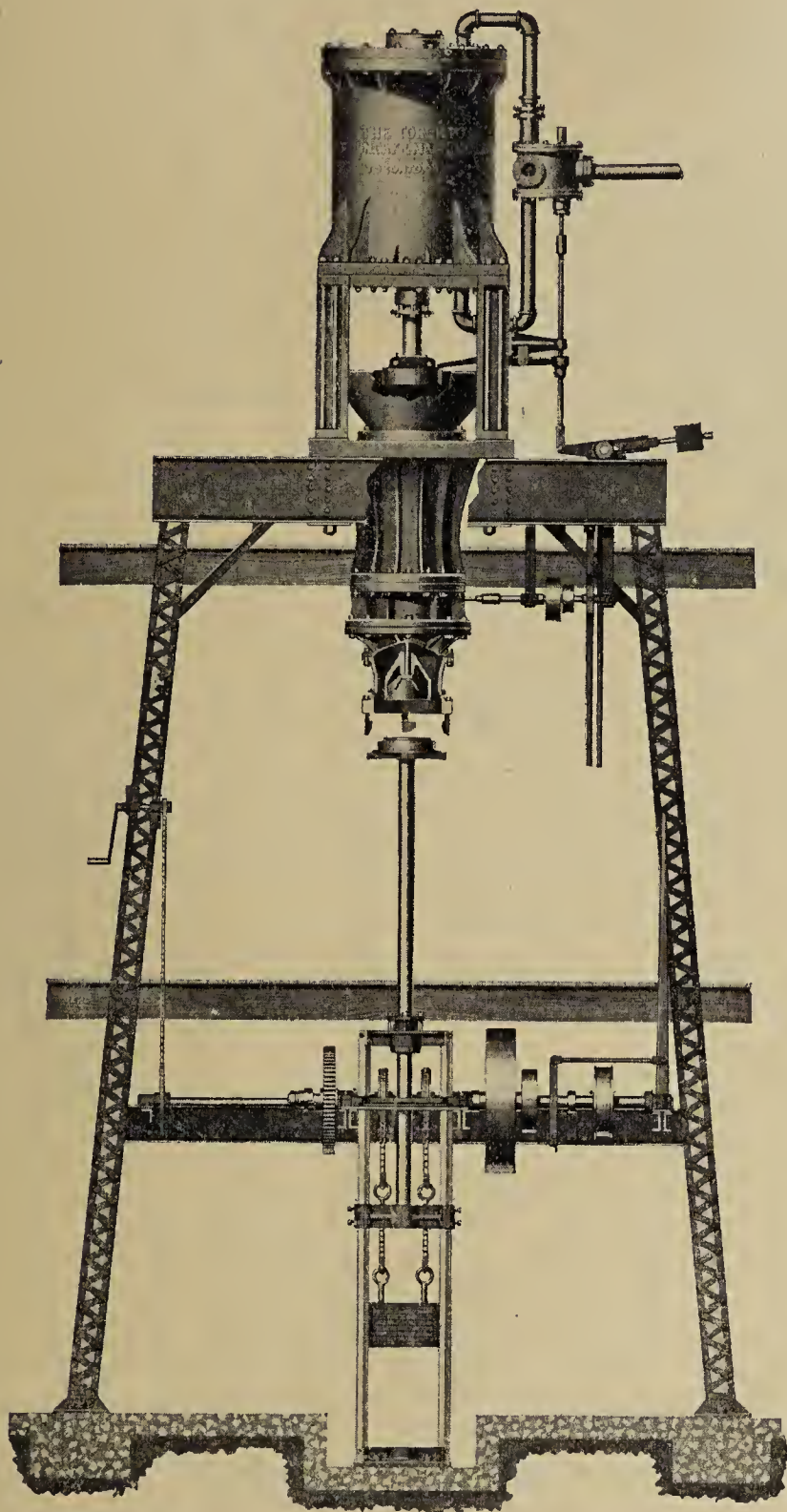
The cost system then actually becomes a necessity when business conditions are such that the margin between profit and loss is very small, no man can afford to do without a cost system unless he wishes to take the risk of loss. In that case he may be insolvent for a year, or even two, before he finds himself entirely bankrupt. If he had had a cost system such a condition could never arise.

When profits are small in proportion to the volume of business, the owner of the business cannot trust to the

(Continued on page 72)

TORONTO SEWER PIPE PRESSES

STRONG
DEPENDABLE
QUICK
ACTING



SIZES: =

40=44=46=48 "
Steam Cylinders

18=20=22=24 "
Clay Cylinders

ATTRACTIVE
FEATURES:-

Long Stroke

Large Filling
Space

Clay Hopper

Piston Valve

Automatic
Cut = Off

Die Hoist

But Three
Levers To
Operate.

THE TORONTO FOUNDRY & MACHINE CO.
TORONTO, OHIO

Mention THE CLAY-WORKER.



THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

ATTENTION
BRICKMAKERS!

From "Missouri" and Elsewhere.

While attending the

CONVENTION at CLEVELAND
don't fail to visit the plant of the
OHIO CLAY CO., at Willow and
see the EAGLE SHALE PLANER
in operation.

Our representative will be there
to "show" you.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

STANDARDIZED COSTS FOR CLAYWORKERS.

(Continued from page 70)

general financial statement. He must find out where he is losing money and make some effort to remedy the evil.

Not long ago a foundry was forced into bankruptcy because it had undertaken to produce 200,000 castings at \$7.00 per casting. This estimate was made without any cost records—a mere guess. When it came to actually turning out the work, it was found out that each casting cost \$8.00 instead of \$7.00, and this company, bound by an iron-clad contract, had to take a loss of \$200,000, which was enough to put it out of business.

Cost System Necessary When Business Expands.

A cost system also becomes an absolute necessity when business expands and becomes complicated. Then it is impossible for one man to carry all the details in his head. He has to resort to a record system or else limit the size of his business to the capacity of one man. But if a man aims to expand his business gradually it is well to have the skeleton of a cost system installed from the very beginning. Then it does not become necessary for him to break down established traditions of long standing. Such traditions not only make for inaccuracy later on, but they create the very embarrassing situation, as a rule, of having to let an old employe go because he cannot conform to the new methods. A cost system provides for accuracy that no memory method, no matter how efficient it is, can possibly compete with. The only intelligent way to fix prices is on the basis of past performance and there is no man living who can commit to memory all of the experiences that pass through the plant of a clayworker.

A cost system is invaluable when a quick accounting of the business is needed. It may be necessary to borrow money from the bank. No bank will lend money on a business unless its records are complete and very detailed. If you have to call in an accountant to straighten out the records of your business just before you borrow, you will find the loan very costly. In case of a fire it is 100 per cent easier to collect insurance if one has proper records with which to back up his demands. Labor cost records are absolutely essential in determining the extent of liability and compensation insurance one has to pay. A cost system is a necessity whenever a quick accounting of the business is needed.

It must be borne in mind that one goes into business for a long time, usually for life. Whatever one does to improve the condition of the business is done with a view to making the improvement permanent. The more a man's knowledge of his past experience is, the better he can manage the present and estimate the future. If a man does not manage his business scientifically but blunders through it, he is sure to come to a standstill very shortly or else be forced out altogether.

A cost system has many functions, but perhaps most important of all is the fact that it serves as a business measure. It offers the manager a picture or reflex of the business and summarizes the details for him in such a manner that his mind is easily able to grasp the entire situation. The cost system tells the owner where the money goes and also enables him by referring to past records, to determine whether expenditures are justifiable or not. The mere fact of having a gauge or measure has the effect of reducing expenses because it signals unwarranted expenditures and prevents their being incurred. A cost system also tells the owner how much to charge for his work in order to make a profit. A cost system serves as a check on labor. It enables an employer to determine which men do the best work. It sets up a standard by which to gauge the ability of his men and it is an invaluable aid in estimating future work because it establishes the minimum and the maximum standard of the capacity of his labor.

Cost Systems Make for Intelligent Competition.

A business of any proportions cannot be well managed today unless it employs a cost system. A man who uses it properly will never think of being guided by his competitor's

(Continued on page 74)

SERVICE

THE KEYNOTE TO SUCCESS

EQUIP RIGHT TO RUN RIGHT

USE

—“STEVENSON”—

DRY PANS, WET PANS, CRUSHERS
SEWER PIPE AND TILE PRESSES
BUCKET ELEVATORS, FEEDERS
ETC.

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

STANDARDIZED COSTS FOR CLAYWORKERS.

(Continued from page 72)

prices. He will demand the price that covers the cost of his production and yields him a reasonable profit, regardless of what anyone else is asking. Such a cost system raises the morale of an industry.

It would do away with the deplorable condition existing among brick manufacturers. Too often a man will fix his price entirely on the basis of what his competitors are asking without regard to the actual cost. My first thought on hearing of this is to ask, "How can a man continue in his business over any period of time if he does not ask enough to cover the cost of production and make a profit besides?"

There are times when only the most rigid kind of economy will produce profits. It is next to impossible to practice economy without injuring the business when one does not know his costs. An additional value that a cost system has is that it very clearly defines all the various elements of the business. Thus overhead is never too high when the figures are down in black and white. The reduction of overhead to increase the profits is a natural consequence of a properly maintained cost system.

The installation of a cost system calls to the attention of some business men for the first time the fact that they are entitled to a salary for their personal services in addition to profits on their financial enterprise.

A cost system enables the manufacturers to fix their prices properly and to determine their business policy. The element of chance should be removed from price making altogether. Nothing will win the respect of the public and raise the level of the clayworking trade more quickly than standardized prices for work.

Aid to Business Policies

On the other hand, suppose he wishes to popularize the use of a certain product that he can turn out in quantity. In order to induce buying, he may be willing to put the article on the market at a little below cost. Unless he uses a cost system he can never tell how far he can go and whether he is engaging in a losing venture or not. A cost system will furnish the manager with monthly statements that will tell him first, what the general financial condition of the business is at the end of that month; second, what the financial operation of the business has been during the month; and third, what the manufacturing, administrative and selling costs are.

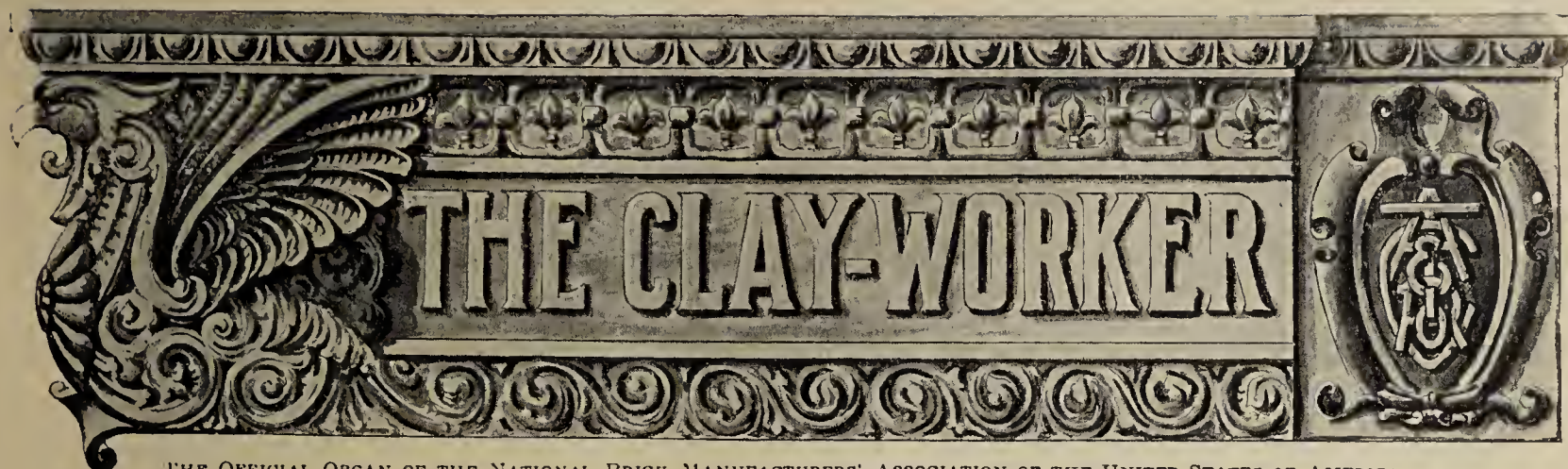
Eliminates Waste

Furthermore, the cost system will point out any inefficiency that exists. The various reports and documents used in connection with this system follow the production from the time the raw material is taken up until the bricks are shipped. By means of these records it is easy to determine: first, what losses in material occur; second, what waste of time; third, the extent of loss in defective work; fourth, the exact individual to blame in case things go wrong, and fifth, any other leaks that may occur in the business.

(To Be Continued.)

GOOD DRAIN TILE NEWS.

There is some good drain tile news in a statement made by the Secretary of Agriculture that the farmers get this year something near two billion dollars more in crop returns than they got last year—that 1922 was about two billion better in the returns to farmers than 1921. Surely this ought to brighten the chances to sell farm drain tile, and put that pep and enthusiasm into the boys who go out to sell it that will bring in a greater share of trade and put the drain tile business in high gear again.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 79

INDIANAPOLIS, FEBRUARY, 1923.

No. 2



OFFICIAL REPORT OF THE THIRTY-SEVENTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION, CLEVELAND, OHIO, FEBRUARY 7, 8, AND 9, 1923.

EACH DAY IN EVERY WAY, the recent convention of the N. B. M. A. was most satisfactory. The attendance, while not as large as had been hoped for, was gratifying, there being all told nearly five hundred present, including the ladies. Once again, there was a sufficient number of railroad certificates to enable those who so desired to secure the reduced fare returning.

The N. B. M. A. has been often referred to as a social organization; surely the social features at Cleveland alone justified the time and trouble incident to the trip, while the convention proceedings, as will be seen by the subsequent convention report, were in keeping with the high standard set by previous conventions.

THE SMOKERETTE, the informal social event, Wednesday evening, was the first gathering of the N. B. M. A. throng, and it proved a most delightful occasion. A good dinner interspersed with community singing under the direction of a clever artist, Mr. Harry McDonald, lent an air of jollity that carried through the entire evening. There followed a series of musical numbers and some select vaudeville stunts which elicited much applause. The spirit of friendly companionship was injected by David Olmstead, the manager of Hotel Winton, who proved himself a master entertainer by personal attention to the amusement features. When dancing became the order, Mr. Olmstead introduced the ladies and gentlemen present en masse, as it were, so there was no need for further formal introductions. This led to a happy

intermingling of participants which gave the assemblage the appearance of a great jolly family gathering, and added immensely to the evening's pleasure. The function was held in the Rainbow room of the hotel, which is aptly named, for it is unique in arrangements, commodious, and brilliant in setting.

The playlet, which was to have been staged by members

GREETING FROM PRESIDENT HARDING.

Who Was Made an Honorary Member of the N. B. M. A. at the Indianapolis Convention, 1922.

*The White House,
Washington.*

February 8, 1923.

Dear Mr. Randall:

Please accept my sincerest thanks for your note of February 2d. The modesty of your suggestion adds to my regret at having to say that it is not possible for me to get away from Washington at this time, and that, therefore, much as I would like to meet the members of the Brick Manufacturers' Association, it is impossible to accept your invitation. I would greatly appreciate it, however, if you would express to the members of the Association my greetings and good wishes and the most earnest hope for a year of success and prosperity.

Sincerely yours,

(Signed) WARREN G. HARDING.

*Mr. Theo. A. Randall,
Indianapolis, Indiana.*

of the Cleveland Builders' Exchange, did not materialize, but Teddy Roberts, the clever secretary of the Exchange, did. He was introduced by Secretary Randall and in a happy manner voiced a most hearty welcome to the visitors. He expressed regret that the members of the Exchange were unable

*Copyrighted, 1923, by the National Brick Manufacturers' Association.

to produce their stunt, and in lieu of same introduced some fine local talent who scored several hits with readings and vocal numbers.

Treasurer John Sibley gave an amusing monologue entitled "Off Hand Justice."

"Off-hand Justice or The Law on Husbands."

Scene Judge "Ab's" Court Room, Birmingham, Ala., December, 1922.

There was an unusually large crowd in attendance at the matinee session of the County Court of Misdemeanors, presided over by Judge H. B. Abernathy, and standing room only was in evidence.

The Court had just been called to order by Sheriff Jack Greener, and Judge "Ab" was glancing over the docket, when quite a commotion was heard without the portals of the Court Room.

"Sheriff Jack," said the Judge, "what means this disturbance at the outer door. From the noise that is being made it sounds like some one has kicked a goal."

"Sounds to me more like some one had kicked the bucket," said the high sheriff with a grin.

"A quartet of husbands, even though two are dead ones, is going some," said the judge, "but anyway tell me your story, as briefly as possible and perhaps I can help you."

"Hits dis way, jedge; bout ten years ago I fust married, and I did bettah wid dat marriage dan any one since. Mah husban done got kilt 'on de railroad, and I gits \$700.00 fer him from de company, and jedge, I has moh frens and moh cloes dan I ever has had before; dat is, so long as de money lasted."

"I suppose the money took wings and quickly disappeared?"

"It flew all right. So in bout a month, I marries again, but in a few weeks mah husban goes off on a transportation, and dat was de las I saw of him. I hearn dat he got shot in Sheecargo."

"Shot, by hunk, that's a common ending for them up there."

"Yassah, Jedge, so I ups and marries agin, and in about two weeks dat nigger goes off wid a 'ooman who had good hair."

"What do you mean by good hair?"



President T. E. Willson,
Pittsburgh, Pa.



President-Elect R. C. Burton,
Zanesville, Ohio.



First Vice-President Jotham Post,
East Williston, L. I., N. Y.

He had hardly spoken the words when a large negro woman who could easily muster 200 pounds of quivering black humanity, and with perspiration streaming down her face appeared at the door and shouted:

"Open de way, dar, you niggers, fo I is sho comin through." And she bucked the center.

As the woman ploughed her way through the crowd, Judge Ab yelled, "Tackle her, Jack, tackle her."

"I did not recognize the signal, Judge," retorted Jack, "besides it would take the strength of an entire star football team to stop her."

By this time the woman had reached Judge Ab's bench, and addressing her, he said, "Look here, old woman, don't you know the court is open—"

"Jedge, I didn't stop ter ask erbout dat, bnt it am sho gwine be opened now."

"What is your trouble?" asked the judge.

"Dere ain't no trubble a-tall fer me but Ise fixin to make trubble fer some one else, pervidin you can gib me de right advice. What are de law on husban's?"

"I notice you use the plural on the word husband, you don't mean to say you have more than one husband?"

"I is, and den I ain't, jedge; I has bin married four times; two are dead and two are livin'."

"Hair dat is straight, like de white folks. So after he had gone—"

"Well, what happened to him?"

"I is sorry to say dat he is still livin, how cum I knows dat, is dat after he lef me, I married agin, an on de fust cold spell we had and I was in de bed, I heard a knock on de do. 'Who dat knokin on mah do?' I says, and I hears a man's voice say. 'Hit are me, Honey, open de do and let me in.'"

"Den I recernize my third husban's voice, so I says, 'Go way, nigger, you has been transpanted. You runned off widout payin yo rent or de furniture man, er de policy man, an I is in here wif mah husban, who is er bad nigger when he gits started; so go way fore you gits hurted,' and with dat I turns over and goes to sleep."

"What became of the fourth member of this family quartet?"

"Does yer mean mah las husban?"

"Yes."

"Wal, sah, de nex day de pertecters come and takes him away, saying as how he war wanted in Georgy fer some fense, an I ain't seed him no mo."

"It would seem that there was an open season for your

husbands. Now what is it you want me to do?" said Judge Ab.

"I wants to know dis one thing jedge: since wimmin done bin started to vote, and doin' like men folks, does de law compel me to take care of dese heah husbans of mine like de white folks do?"

"Well, aunty, the law is jealous of woman's rights to the extent—"

"Yassah, I knows dat Jedge, an it appear tot me dat de winmin are jealous of dere husbans' rights, from what I can hear. Why, Jedge, hit are got so dat jes as soon as spring time comes dese niggers have bin wanderin up Norf, and den when de fros comes dey comes er wanderin back and dey takes em back. But dey sho done los dere home wid me, and I ain't gwine take em back."

"Well, aunty, you must come to the point at once, and tell me just what you want me to do."

"Ise at de pint right now, jedge, Yo see dey is a preacher man what wants me ter marry him, an I thought dat I might try one mo, but ef he do like de rest of em do, bout one mo clean shirt will do him."

The first convention session was held Thursday morning, and considering the fact that a majority of those present had sat through three days of convention proceedings the faithful were on hand when President Wilson called the meeting to order at ten o'clock, and the real business of the convention was taken up and carried through in an orderly and expeditious manner. President Wilson believes in a snappy convention, and the proceedings meet his requirement in that respect

FIRST N. B. M. A. SESSION

Thursday A. M., February 8, 1923.

President Wilson: Gentlemen, we will come to order. Our secretary told you last night at the dinner dance that one of the things the ladies wanted to come up here for today was to hear the addresses of the successful candidates. As I am not a candidate, you will therefore not expect an address from me. The successful candidates will not speak until they are elected, so perhaps it will be best to get busy and elect the successful officers, and that will relieve me.

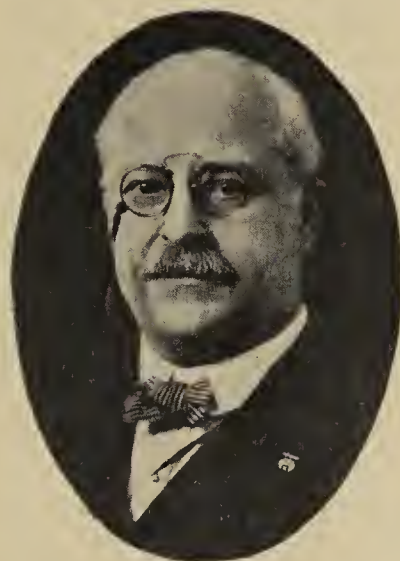
Secretary Randall: We are going to be obliged this morn-



Second Vice-President Douglas Stevens,
Danville, Ill.



Treasurer John W. Sibley,
Birmingham, Ala.



Secretary Theo. A. Randall,
Indianapolis, Ind.

"What do you mean?"

"I mean dat," and here the woman pulled out a large springback knife, which by the way has supplanted the time honored razor as a weapon for social purposes among the negroes. "I means dat it will be de shirt he will be buried in."

"Before you go any further, aunty, I will inform you that the law will punish you very severely if you undertake to carve your monogram on the person of your husbands, past, present or future. Have you been divorced from your former husband?"

"Nossah, jedge, dey vorced deyselves. Sides de ain't no use throwin way money on dem trash."

"Let me tell you what you must do—"

"I knows what to do, jedge, I jes wanted to know did I have to take care of dem husbans and now I knows," and with that she started toward the door.

"Sheriff Jack, blow the whistle for the second quarter. Having got rid of the interference we will now proceed with the game, using the lineup on the docket."

At this juncture, Old Pap, a negro who is janitor at the Court House, spoke up and said, "Jedge, who is gwine preach dat nigger's funeral, for I sho has a predicament dat it will be preached in de nex few days?" (Applause.)

ing to omit one of the very first things on our program, and that is the Opening Prayer. The Reverend J. Alfred Wright of Cleveland who was to have performed that duty for us has telephoned he is unexpectedly detained by a funeral this morning. Perhaps he will be able to be with us later during our sessions. We have with us the representative of the Mayor of Cleveland. The Mayor himself is ill and so unable to be here, but he has sent Mr. James W. Holcomb, Commissioner of the Street Railways of Cleveland.

President Wilson: Ladies and gentlemen, I am glad to introduce Mr. Holcomb who will welcome us on behalf of the Mayor. (Applause.)

Welcome to Cleveland.

Mr. President, Ladies and Gentlemen: It is rather out of the ordinary to call upon a street railway man to make a speech for the great city of Cleveland. Generally, railroad men are not very good talkers, and I am no exception to the general rule. However, our distinguished Mayor is ill and gets around with a great deal of difficulty just now. Therefore he is unable to be here this morning and has sent me here to speak for him. I wish to extend to you on behalf of the Mayor of Cleveland a hearty welcome and assure you the gates are wide open to you and we trust you will avail

yourself of the opportunity of viewing the sights of the city so you may take home with you a fine recollection of Cleveland, and when you are ready to select a city for your next convention, you will all want to come back to Cleveland.

It would be ridiculous for me to attempt to discuss the brick question with you. I had a little experience myself some years ago with a brick, and it was not a common ordinary brick and it was not a member of the National Brick Manufacturers' Association who passed it to me, for it was not the kind of a brick you men manufacture. It was supposed to be a real good oil proposition, but it was a gold brick—enameled. (Laughter.)

We think we have a wonderful city. We live in a wonderful state—the Buckeye state. History records that Virginia was formerly the Mother of Presidents, and we will concede that she was. Ohio is a child of Virginia, and we believe that the mother has long since been called to her reward, and the Buckeye maiden has blossomed into womanhood, until today Ohio is the Mother of Presidents, and not least among these is Warren G. Harding. (Applause.)

Cleveland is beautifully situated from the manufacturing standpoint, upon the south shore of Lake Erie, where the rail terminals meets the ore from Lake Superior. Our forefathers who laid out the city selected well. It is said there are some legends about how they laid it out, and before telling that I wish to say that I was requested to come here today to represent not only the Mayor, but the Director of Public Safety and the Chief of Police. Now, of course, this will not happen to any member of the National Brick Manufacturers' Association, but if perhaps your feet slip while you are here, remember I am your friend, and the Chief of Police must stand by what I say. (Laughter.)

The legend to which I refer is one which is sometimes told, I am not certain it is true, but it is said when our forefathers laid out the city, they had no idea it would become a metropolis of a million people, and they selected a site of land just east of the Cuyahoga River, and after they made their survey, it dawned on them they should have more land, so they went west of the Cuyahoga River, and purchased from the Indians two or three acres for a jug of fire water. I do not know whether it is true, but they say now the Westsiders have been trying to trade back. The circulating medium of our city is the same as other large cities, but they do say some of our distinguished citizens manufacture their own. Now, therefore, if your feet should slip, I am here as I said to represent the Director of Public Safety, the Chief of Police and the Mayor, and they will have to stand for what I say to the members of the National Brick Manufacturers' Association. They will probably not have to make good, but you never can tell. (Laughter.)

Cleveland's Great Auditorium.

I want you to look over our city over, and see our great public hall. We have, we believe, the finest public hall in the United States, erected at a cost of \$8,000,000 and just finished. No hall in the United States seats more people. We have a new twenty-two story building which contains the handsomest theater in the world; I am sure you will agree with me as to the truth of this, if you ever get inside of it.

To talk along the line of my occupation. I happen to be the Street Railway Commissioner of Cleveland, and I have had in my office within the last two months the railway commissioners of Toledo, Detroit and Buffalo, the Street Commissioner of New Jersey and three of the Board of Commissioners of New York, and they have spent from one to three days going over our Street Railway system and they have all pronounced it the best system in the United States; the best maintained, the cleanest cars, and the cheapest rates. We haven't municipal ownership, but what we regard as better, municipal controlled. The city does not own one cent of stock. It is a private corporation with a capital of about \$10,000,000 under the control of the city.

I happen to be the representative of the city. We have 400 miles of tracks, with 1,500 cars, and we wash every car

inside and out every forty-eight hours. We carry a million passengers a day, and our receipts are \$50,000 a day. Out of the general fund we pay for the operation of our line \$775,000 a month. The interest on the capital invested amounts to \$167,000. We guarantee the stockholders 6 per cent, and the franchise known as the Taylor franchise provides that the balance of the fund after the necessary charges are taken out shall remain as an interest fund and the policy of the Taylor grant is to keep that fund as nearly \$500,000 as we can. When it reaches \$700,000 the fare automatically comes down. When the fund goes below \$500,000, the fare automatically goes up.

The fare is now five cents and a penny for a transfer. During the war, when other cities were paying eight and ten cents for street car fare, Cleveland paid six cents, and last year went down to five cents, with a penny for transfer. That is better than municipal ownership because in municipal ownership you must buy the system. We haven't as a city one cent invested, but the car riders—a million car riders are owners in a sense, because they participate in the profits. The fare is reduced as the company makes money. It is a wonderful system. We believe it is so good we have in our operating allowance \$500,000, in our maintenance allowance \$800,000, and the company was never in the physical condition it is in today. It is A No. 1. So much for that particular branch of the city in which I am engaged. We would like to



G. P. Mayer, Bridgeville, Pa.

have you look over our plant, if you are interested. Look over our city and have a good time, so good that when you meet to select a meeting place for your next convention, you will want to come back to Cleveland. I thank you. (Applause.)

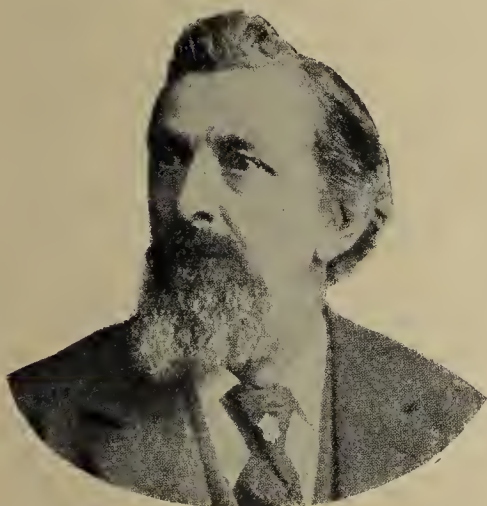
President Wilson: We have certainly been interested in what the representative of the city has told us. Is Mr. Stocke in the room? He was to respond to this address of welcome and was in here a while ago. If he is not here, I will call on Mr. C. P. Mayer, of Bridgeville, Pa., to respond. When any of us come from small towns near Pittsburgh, we say we come from Pittsburgh. Mr. Mayer is from Bridgeville, just outside of Pittsburgh, so we claim him in Pittsburgh. (Applause.)

Mr. Mayer's Response.

C. P. Mayer, Bridgeville, Pa.: Mr. Holcomb, ladies and gentlemen, last Sunday I was called to New York and just returned in time to get in here a few minutes ago, and have not had any time to look at the program, and I am rather surprised that I should be called upon to answer such an eloquent address as that to which we have just listened from the representative of this great city. Mr. Stocke was to respond, and between him and our worthy president and Mr. Randall they put one over on me. I was looking over this little reference book I keep in my pocket because I had been notified by Mr. Randall that I would be expected to make a little talk on brick as I saw it in Europe last fall and for

that reason I have not heard all the speaker has said, except he assured us they would take care of us if we got into trouble. I suppose if we are out late at night and get in wrong, all we have to do is to notify the administration we are in the lock-up, or wherever we may be and they will come and get us out. However, the brick men don't need that kind of guarantee, for I never knew any of them to get into trouble. They are all clean, decent fellows and don't go out night prowling. (Laughter.)

He told us about how the street railway system was operated and how the city controlled the street railway and yet the city has not one cent invested, and how they dictate and dominate the policy and it puts me in mind of the socialists in Germany. I came from there a couple of months ago, and I happen to know something about it. It is a funny thing, and you men may all want to go to making brick in Germany because the socialists committee or commission that regulates the wage law, publishes in the newspapers on Monday morning that the wage is 200 marks per hour. That is all the notice you get, and you are supposed to comply with it or go to jail. Would you like to go to Germany? Wouldn't that be nice? The next day the commission issues another order and tells you that the wage will be 250 marks per hour. It seems to me the city of Cleveland does with the Street Railway Company just what the socialists do with the manufacturers in Germany. They comply with it at their own expense.



John T. Hummert, Quincy, Ill.

The fact run through my mind when the commissioner spoke of the efficiency of the city in handling the street railway system, and then how wonderful it was having the President of the United States as a citizen of the State of Ohio, that President Harding might profit by adding as his administrative advisor the honorable Commissioner of the Street Railway Department. I was going to suggest the President might take the Commissioner over to Washington and put him in charge of the government there and quite an improvement might follow. I do not mean that as a criticism, I am honest about that. There is hardly a brick man in this audience but knows that when I talk about anything I call a spade a spade.

This is not our first convention in the city of Cleveland. Cleveland has always treated us right. We think, Mr. Commissioner, you have a great city. We think you have many notable things in your city just as we have notable things in all our big cities in this country. They are of great importance, and while they are local, yet they are commendable, and Cleveland has its share in these things that are commendable to America.

I would hardly know what to say except that we may congratulate ourselves on having been called to Cleveland for this annual meeting, and we thank the city and the mayor, and particularly the police department for agreeing to take care of us, for the hospitality they are going to give us and

which they offer to give us. We appreciate very much the cordial welcome extended by Mr. Holcomb, and President Wilson may be able to say the nice things which should be said on this occasion. (Applause.)

Election of Officers.

President Wilson: With your consent, we are going to proceed with the election of officers. What I have to say in the way of a President's address will only take a few minutes and can come later on. Nominations are now in order for President.

John T. Hummert, Quincy, Ill.: It gives me great pleasure and I like to do it with a smiling tone, to put in nomination for President, Mr. R. C. Burton.

J. Fred Smith, Omaha, Neb.: I second the nomination and move the nominations be closed, the rules be suspended, and the Secretary cast the unanimous ballot for Mr. Burton for President.

Mr. Wm. H. Hammerschmidt, Lombard, Ill.: I second the motion.

Carried.

Secretary Randall: The ballot has been cast.

President Wilson: You have elected Mr. Burton of Ohio your President. Nominations are in order for First Vice-President.

George H. Clippert, Detroit, Mich.: I want to nominate Jotham Post. He wants to be known as Joe Post. I think he will make us a very good President in due time, with a good short name.

Mr. Hummert: I second the nomination, and if there are no other nominations, I move we follow the same procedure as with our President.

Seconded and carried.

President Wilson: Well, Mr. Post is elected First Vice-President, and the next is Second Vice-President.

William Hammerschmidt: I rise to nominate Mr. Douglas Stevens of Danville, Ill. Illinois is not big enough for him, so he has his plant over in Indiana and lives in Illinois. I move the rules be suspended and the Secretary cast the ballot for Mr. Stevens for Second Vice-President.

M. E. Gregory: I second the motion.

Carried.

President Wilson: You have elected your First and Second Vice-Presidents, and here is where we get a new man on our list. Nominations are in order for Third Vice-President.

B. W. Morris, St. Louis: I want to nominate Mr. Jacob Stocke, a brick man from St. Louis for Third Vice-President.

W. C. Mitchell, St. Louis: I second Mr. Stocke's nomination.

M. E. Gregory: I move the nominations be closed, and the Secretary cast the ballot for Mr. Stocke.

Charles F. Clippert: I second the motion.

Carried.

President Wilson: What is next, Mr. Secretary.

Secretary Randall: That finishes the election of officers, for Treasurer Sibley and I have been elected for life. We are on "Easy street" and do not have to go out and pay out a lot of money for votes in order to be elected. We have a member of the Committee on Technical Investigation to be elected, but I move that be left with the Executive Committee together with appointment of members of other committees, to be announced later.

Mr. Lucktenberg, Zanesville, Ohio: I second the motion. Carried.

President Wilson: I am going to ask the newly elected officers to come to the platform. Mr. Burton seems to have stepped out of the room. I want to get through with what I have to say before I turn the affairs over to Mr. Burton. If he is not here, I may be able to talk until he comes. But I am sure you will all be sorry if he stays too long. You are all aware of the fact that the time for our program is shorter this year than usual and for that reason, if for no other what I have to say will be very brief.

President Wilson's Address.

It seems fitting to me that the outgoing and incoming president should have at least a few words to say concerning this great industry in which we are all so vitally interested. The brick business last year was not as satisfactory as it might have been, or as it should have been. The demand for brick in all parts of the country was sufficiently great, but the cost of production, I take it, was entirely too high in almost all parts of the country. Another thing the transportation facilities were very inadequate. The causes for these conditions you are familiar with and know what they were just as well as I do.

First came the coal strike which occurred the first of April last year and continued for five months and caused a high price for fuel in all parts of the country. The next thing that happened was the railroad strike which continued several months, and impaired and congested railroad transportation, so we had embargoes and delays in shipments without number.

Then after these strikes were over what happened? We had scarcity of labor and high wages, and the average brick man had to advance wages many times or shut down his plant, so that will account for the high cost of production and will account for the troubles we had in getting rid of



George H. Clippert, Detroit, Mich.

our product after we had it made. This scarcity of labor for our industry and many others, as you perhaps well know, is occasioned by the present immigration law, which I think should be loosened up in some manner without further delay. I do not mean to say immigration should come into this country without restriction. It should be restricted and inspected rigidly, and the time and place in my judgment to inspect the foreigner, is on the other side, and not after he reaches our shore. You can learn more about a man in the neighborhood in which he lives and from his neighbors; you can find out more about him, than is possible after he has landed in a strange country. He ought to be inspected and encouraged to come over here. We need good honest workmen and plenty of them in this country and if I had not promised to be very brief I would tell you how desirable foreigners could be brought to this country and the undesirable ones kept out.

In spite of these troubles, strikes and embargoes, the brick men weathered the storm and made and saved some money because for the first time he has learned to ask a reasonable price for his product, and for that reason he is able to put up with all these things and get through the year.

How about the year that is before us? That is what we want to know, more than about last year. I think this year ought to be the best year we have ever had, and I have reasons for thinking that. In the first place, there is not going to be any coal strike. That question has been settled for another year. We will hardly have any railroad strikes this year. You have observed these great industrial strikes do not come two years in succession. It is fresh in

the minds of the people, and those who bring these strikes about know one will last everybody for the year, and you never see these two strikes two years in succession, but there are one or two troubles we are going to have, as I see them.

Labor will be scarce and wages high, and we will still have the same railroad trouble of embargoes. You will get an order and you will get ready to ship and then an embargo will come and then it will be off. You will receive a notice and it will hardly be off until it will be on again. Railroads are improving their equipment very rapidly, especially the motive power. That is the thing in which they are lacking most, and I look for better railroad facilities this year than we had last year.

Then, too, the demand for brick I think will be the greatest in the history of our country, because we have the money in this country with which to build, and isn't it a strange thing that when things cost the most is when people build most. That seems paradoxical, but it is true. We have money to finance buildings. Another thing is that dwellings, school houses, and other public buildings are largely needed, and because people generally have learned to know the superiority of our product for building purposes over that of all others.

I think I had better quit pretty soon, or I will not be brief. I want to mention one other matter before turning over to another this office to which you saw fit to elect me a year ago, and that is a matter about which I have been talking a great deal for two or three years, and that is these annual conventions of ours. I do not believe there is any one any more interested in the annual conventions than I am. I belong to the Face Brick Association and the National Brick Manufacturers' Association, and the Common Brick Manufacturers Association. It is a difficult matter to attend all of them and it takes a great deal of time to attend two or three conventions. It takes more time and money than the average brick manufacturer has unless he can borrow it. For that reason I advocated very strongly a year ago that these two conventions be held together, such as we have done this year. I happen to be an officer in both associations, and I think I will not be accused of boasting when I say I had a great deal to do with bringing these two conventions to the same city, the same week and in the same hotel, hoping it would meet the approval of both organizations as it means the saving of time and the saving of money.

So far as I know everything is going to be very satisfactory to all concerned. Why should it not be? Most of the brick manufacturers are members of both these organizations. Why should there not be harmony? Why should not all be interested in these two organizations getting along together; no reason I can see whatever. There is really no ground for friction or misunderstanding. No man ever pulled himself up by trying to pull his neighbor down. No organization ever increased its membership or influence for good by fighting a similar organization. I hope this same arrangement, or some similar arrangement will be continued year after year. (Applause).

I believe if there is any man who ought to practice economy and avoid waste, it is the brick manufacturer. For our own sake we should insist upon these two conventions being held at the same time and place and the same hotel, if possible. By so doing we will save not only a great deal of time, but thousands of dollars for the organizations that would otherwise be paid out in railroad fares and hotel bills.

There is just one other thing we can do, that can beat having the two conventions in the same place at the same time. I will give it to you. I have no authority to speak for anybody. The only thing that can beat having these two organizations meeting together in the same place is for us to consolidate, have one organization instead of two. If there was one organization instead of two, there would not be this duplication of effort, this duplication of program. You would have more time when you come to conventions. Some of you would not have to get up so early; would not be hurried to come to the meetings. I believe if the amount of money expended by the two organizations could be expended by one, it would be more satisfactory to you and to the industry which we represent. In the consolidation of these two organizations, all of the officers, especially the officers who have spent years in building up these organizations would be taken care of. It is my hope and my wish if we cannot have these meetings together year after year satisfactorily to all concerned, we may be united in one big organization.

Now before turning over this office to my worthy successor, I want to thank you sincerely, all of you, for the courtesy you have shown me the past year, and I want to wish for all of you that the year 1923 be memorable in your lives for much prosperity, much happiness and many blessings. (Applause).

Now, of course, we should have had the President's address before we had the election of officers, but you are going to have to take what you can get more than what you want, and I rather wanted to wait to talk to you after the officers had been elected. Talking about taking what you can get reminds me of a story I heard the other day. I think it happened in Alabama or Georgia. The boss of the place, "Col. Bob" heard a rap at the back door; he went over to see what was wanted and there stood Jim with his hand up to his head. "What do you want Jim?" "Well, I tell you Mr. Bob, I decided Liza and I want to get married. I want you when you go to town to get a license." "All right, Jim," said Colonel Bob, "that will cost you \$2.00." So Jim fished in his pockets and finally took out \$2.00 and gave it to his boss.

The next day the boss brought him back the license and gave it to Jim who went away apparently happy, thinking he was getting what he wanted. In three or four days Colonel Bob heard a rap at the back door again and there stood Jim.

"What do you want now, Jim?"

"Colonel Bob, I done changed my mind. I don't want to marry Liza. I wants to marry Begonia. Can't you jis5 scratch out the name Liza, and put in Begonia, Colonel Bob?"

"No, Jim. The only thing I can do is to take this back to town, and have them make out a new license and put Begonia's name in the new one, and that will cost you another \$2.00."

Jim was very much crestfallen and went away. Three or four days after, Colonel Bob was riding down over one of his farms and saw Jim at work, and he said:

"Hello, Jim, how are things? Are you married yet?"

"O, yes, sir, I done been married."

"You are married? Who did you marry?"

Jim grinned from ear to ear.

"O, I married Liza. I'd a heap rather marry Begonia, but I thought the matter over a long time, and I just couldn't see two dollars difference between them two niggers, no how." (Laughter).

Now, I really want to introduce you to your new president. I take very great pleasure in presenting to you Mr. Rufus C. Burton, of Zanesville, Ohio, who will preside over us for the ensuing year. (Applause).

Installation of Officers.

President R. C. Burton: Mr. Chairman, ladies and gentlemen—members of the National Brick Manufacturers' Association, I am glad our retiring president gave me such a good send-off. He seems to indicate there is not much difference between speakers, and I am glad, he has let me down so easy. I want to thank you sincerely for the honor you have bestowed upon me. After making brick for forty years, and attending, I think, nearly every N. B. M. A. convention, I don't want to be classed yet as one of the old brick manufacturers, I want to be classed along with my good friend Mr. Hummert—one of the young fellows. I recognize Mr. Hummert as being present at nearly every one of our conventions and being up-to-date.

Again I thank you for this honor, and it is indeed an honor to be President of such an organization as the National Brick Manufacturers' Association. I want to take this occasion to introduce our first vice-president Mr. Jotham Post, or Joe Post, he likes to be called. (Applause.)

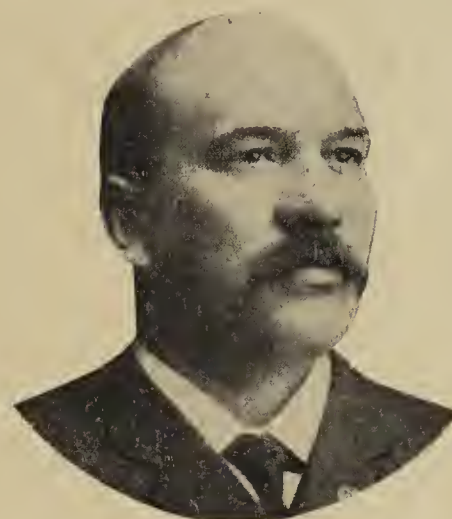
Vice-President Post: Mr. Chairman, ladies and gentlemen, and members of the National Brick Manufacturers' Association, I am a little shy. I was born in a Quaker neighborhood where they are supposed to be quiet. I have no special message at all. We have been busy down on Long Island, and we are going to be busy again this year. In fact, we have always been busy. Last year I was almost disgusted with the brick business, for we had so many orders we could hardly keep up with them. I wanted to make a few improvements and I could hardly get any brick for my own use. I just got disgusted. I wanted to put in a couple of new boilers this fall and got scared for fear I wouldn't have

enough brick for that purpose. But we got through and had a few brick left, but I guess they will all be gone before I get home.

I want to thank you for this honor you have conferred on me. I don't exactly appreciate being up here, I would rather be down there with you fellows. I always try to be on the level with everybody. I thank you. (Applause).

President Burton: There is not much danger of any of our brick men being locked up so long as we are under the guidance of a good Quaker. They are always supposed to be in by eight o'clock. The next one to introduce to you is our new second vice-president, a good brick manufacturer, Mr. Douglas Stevens, of Danville, Ill., and they say Illinois is not big enough for him to make brick in, so he had to go over into Indiana. We are sure of one thing, he is a good brick manufacturer and that is what we are looking for. (Applause).

Douglas Stevens, Danville, Ill.: Mr. President, ladies and gentlemen, I am glad to take this opportunity to thank you for the honor of electing me your second vice-president. I will do everything I can the coming year to further the interest of this Association. I would like to say just a word along the suggestion made by our retiring president in regard



William Hammerschmidt, Lombard, Ill.

to the consolidation of the two Associations whose conventions are being held here this week.

The Functions of the Two National Brick Associations.

You will recall the discussion which took place last year at Indianapolis along this line. I believe we should do everything possible to economize the time and expense of our membership, but I question whether it would work out satisfactorily to attempt to consolidate the two associations, because as I see it each association has its distinct work and is successfully carrying on that work. The Common Brick Association of America, of which I am a member and have been practically since it was organized, was organized for the distinct purpose of promoting the sale and use of common brick and it is very successfully accomplishing that purpose. The National Brick Manufacturers' Association has always specialized in the consideration of the problems pertaining to the production of brick and all classes of clay ware. It is essentially a manufacturers' production organization and I believe if we will confine our efforts to that field we will find plenty to occupy our attention, and we will accomplish more for the industry as a whole by keeping our organizations separate. As to the advisability or non-advisability of meeting at the same time and place as has been done this year, there are many things to consider, and I believe it can be safely left in the hands of the executives of the two organizations. I believe each organization has its distinctive function and both are performing a very essential duty to the brickmakers of the country. (Applause).

President Burton: The next is the introduction of our



"Build your own Home with Brick"
The EVERLASTING MATERIAL.
With the
MANN PATENT TROWEL
you can do it.



third vice-president, Mr. Jacob Stocke, of St. Louis. Isn't Mr. Stocke in the room?

Secretary Randall: Evidently he has been called out.

I think, Mr. President, if it is agreeable to you and those present, we may as well pass on to the other part of the program. We have been working on the program as outlined for Wednesday afternoon, and are now ready to take up the Thursday forenoon program. We have with us this morning, Mr. Oscar F. Mann, of Indianapolis—at home we call him Frank—who has a moving picture to show us of the way the Mann Trowel is being used. A demonstration was made last year at the Indianapolis convention, and since then he has had a moving picture made. There certainly is no question in the mind of any man who has seen the work done with this trowel that its use will speed up bricklaying.

President Burton: Mr. Mann's subject is "Speeding Up Bricklaying." Come on up here in front, Mr. Mann.

"Speeding Up Bricklaying."

Oscar F. Mann, Indianapolis, Ind.

Mr. President, Ladies and Gentlemen: I have a moving picture here and I am not very well informed as to just what it will show, or how it will work. It has never been run off the reel. That is, I haven't seen it myself. The man who made it for me got into financial trouble, and I have taken it off his hands just as it is.

I got into a little trouble down in Indianapolis with the Bricklayers' Union; Mayor Shank and Mr. Dobson, the Secretary of the Bricklayers' Union are in this picture, they came out the day the man was making it, and I could not cut them out of the film because I did not have the opportunity, so you will see both of them. Guess Mr. Randall is in the picture, too.

(Mr. Mann then showed a moving picture which gave a graphic illustration of how rapidly and how well a brick wall may be laid up with the Mann trowel, and at the conclusion of the film nearly half those in attendance gathered about Mr. Mann and questioned him in a very earnest manner relative to the use of the trowel, thus manifesting keen interest in the matter.)

President Burton: This has all been most interesting. The discussion on this subject is to be led by Mr. William Lucktenberg, of Zanesville, Ohio.

Mr. Burton: Before we let Mr. Mann get away, I would like to ask how much time the carpenter spends in getting ready for the bricklayer to work with the trowel.

Mr. Mann: The carpenter don't have anything to do with it, except that he puts up the frame work you saw there. Down in Indianapolis we build a lot of brick veneer houses, using a four inch brick wall. We have a corner piece that we place at each corner of the building, that insures a straight and level job. With that done any ordinary workman can do a good job laying brick and lay them much faster than is done by the old fashion.

William Lucktenberg, Zanesville, Ohio: Mr. Chairman, over at Indianapolis a year ago I became very much inter-



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By using the
MANN PATENT TROWEL,
one man laid all the brick
in the first story
of this building
in 10 hours.



ested in this trowel. We were having trouble getting bricklayers, and if anything can be done to help the industry, the brick manufacturers ought to take hold of it. It is the same as a manufacturer who spends thousands of dollars a year trying to improve his product. We used to make four or five thousand brick a day and now we are turning out hundreds of thousands of brick per day. We are doing everything we can to increase our output, and I do not see why the brick manufacturers should not take up anything which will enable them to lay more brick, for then we will sell more brick.

As I started to say when I was over in Indianapolis, I went out and saw this beautiful home which Mr. Mann has built for himself. We got out of the machine and stood about 50 or 75 feet from where the house stood, and I was surprised. I questioned Mr. Mann whether it was possible for a man who had never laid brick to lay up a whole wall like that. I was somewhat amazed. I walked around the home with Mr. Mann and Mr. Randall and took very careful note of everything, and after examining it all over I came to the conclusion that it was a first class job every way, and it looked the part. I went inside and it looked like about a \$15,000 home. It is a fine home that no one need be ashamed of. I believe if homes were laid up with brick with one of these trowels where you could show people, it would have a direct effect. If you wait for the bricklayers to do it it will be a cold day. I saw the way these brick were laid and it is all right.

I got one of these trowels and took it home with me. I told one of our burners down at the plant I would like to have him see what he could do with it. All the instruction you have is to mix your mortar a little bit soft. He laid up a little stretch about four feet long and three feet high. I said "Keep tab on the time consumed, and lay the brick up as good as you can." He said, "I never laid a brick in my life." I told him that was all right, I wanted him to try it. He took the trowel and laid the brick up at the rate of 1,500 brick per day, or about 150 an hour. He had corners to lay, but he laid them at the rate of 150 per hour, and you could not tell but what a regular bricklayer had laid it up. (Applause.)

Secretary Randall: We are a little ahead of our program, and have been from the start. To go back a little, we find on the program, The Report of the Treasurer, John W. Sibley, of Birmingham, Ala.

President Burton: We certainly want to hear from our treasurer. Mr. Sibley, will you come forward. (Applause). I am sure you do not need an introduction to Mr. Sibley.

TREASURER SIBLEY'S REPORT.

To the Officers and Members of the National Brick Manufacturers' Association,

Gentlemen:—

Despite the turmoil in fuel and transportation the past year has been fairly satisfactory to the Brick Industry, and therefore it is a matter of gratification that the finances of our



association have weathered the gale without encroaching on our balance in hand from the preceding year.

My reputation for maintaining a surplus at all hazards is still secure, for after paying all bills and expenses we have a surplus of \$25.73 to be added to our former balance in hand, making a total now in the treasury of five hundred and fifty-one dollars and fifty-five cents (\$551.55).

This should give you a more contented feeling like the colored widow, Old Mammy Mandy, had in mind when she said:

"Ole Miss, whin mah ole man ast er widder lady de other day, ef her husban' lef' her much, she said. "Pitty nigh every night, Bless Gawd."

But we must bestir a fresh interest on the part of some of our older members and recruit our ranks with new ones to enjoy the benefits and real fellowship of this association with its glorious history and priceless traditions.

RECEIPTS AND DISBURSEMENTS.

ACCOUNT THIRTY-SIXTH ANNUAL CONVENTION — NATIONAL BRICK MANUFACTURERS' ASSOCIATION.

RECEIPTS.

Balance on hand, account 1921.....	\$525.82
Membership fees, 1922.....	\$3,255.00
Books sold, etc.....	20.50

Total income 3,275.50

Total receipts \$3,801.32

DISBURSEMENTS.

Paid for Convention Program, mailing, etc....	\$200.00
Paid for Convention report, mailing, etc.....	368.00
Paid for membership Amer. Soc. Test Mat.....	15.00
Paid for membership Nat. Chamber of Com.....	30.00
Paid for lantern and operator.....	80.00
Paid for lantern slides.....	55.73
Paid for badges.....	149.31
Paid for miscellaneous printing.....	211.80
Paid for postage, telegrams, etc.....	126.18
Paid for number roster and signs.....	63.75
Paid for secretary annual allowance.....	1,200.00
Paid for assistant secretary.....	200.00
Paid for clerk hire.....	300.00
Paid for secretary traveling expenses.....	250.00

Total disbursements 3,249.77

Balance in treasury..... \$551.55

RECAPITULATION.

Balance in treasury, 1921.....	\$525.82
Total receipts, 1922.....	\$3,275.50
Less disbursements, 1922	3,249.77

Net surplus, 1922 25.73

Total balance now in treasury..... \$551.55

Respectfully submitted,

JOHN W. SIBLEY, Treasurer.

Treasurer Sibley: I am also reminded of the story of the little boy whose grandmother was visiting the family. He had never seen her before, and he was perched on her lap, and said:

"So you are my grandmother, are you?"

"Yes, I am your grandmother on your father's side."

"Well, you won't be here long, until you'll find out you are on the wrong side of the house. My mother rules this house." (Laughter).

President Burton: What is your pleasure concerning this report of our treasurer?

Mr. Alfred Pettit, Brooklyn, N. Y.: I move the report be accepted as read.

Mr. Wm. Burgess, Toronto, Can.; I second the motion.

Motion carried.

President Burton: The next according to the program is the secretary's report. Hardly think you need an introduction to him. (Applause).

Report of Secretary Randall.

Secretary Randall: Mr. President and gentlemen, I will report progress. Inasmuch as we have all been full of stories on our colored brethren, I am reminded of the darkey who had been calling on his lady love. He proposed and was accepted. Then he lapsed into silence, and finally the lady said, "Sam, why don't you say something?" He heaved a sigh, and said, "I done said too much already." That is my

predicament. I was married to this association thirty-eight years ago and I have done a lot of talking, some worth while, and some perhaps not so much worth while.

In regard to the past year and the year to come, I am proud to say, things look well for the association. I am for co-operation, absolutely clean and mutual co-operation in the interest of the industry and the record of this association should lead us to expect active and clean cut co-operation without any hindrance or discord of any sort and with such co-operation by the other brick associations we can do more for the industry and for the organizations than if we pull apart, or hesitate and draw away from one another. If we do not have the most cordial co-operation in the future, it will not be the fault of the executives of the National Association. We would not have been here this year had it not been for the expressed wish of a large majority of our members, and I believe if we travel the straight way we will do much good for the industry, as we have done in the past; as to consolidation, Vice-President Stevens has made my speech. He has said just what was in my mind on that subject.

President Burton: Believe this finishes everything in the way of reports and we will pass on to the next on the pro-



William H. Lucktenburg, Zanesville, Ohio.

gram, which is a paper, "Standardized Cost Accounting," by Alfred Baruch, of New York. Will Br. Baruch come up here on the platform.

THE ECONOMIC NECESSITY FOR COST RECORDS.

Mr. President and Gentlemen of the National Brick Manufacturers' Association:

There are two fundamental causes for regular losses in business. One is personal inefficiency; the other is faulty business policy. It is conceivable that a man who is very intelligent and has a high degree of personal efficiency may still make enough mistakes in his business practice to bring on a loss, while, on the other hand a man whose business policies are sound may even be able to overcome the handicap of inefficient production, although of course his profits will be small. The question of personal efficiency is the problem of the individual clay man. The question of business policy is very closely associated with costs since the cost system serves as a barometer to business conditions.

It is only in recent years that costs have been emphasized as at all important. Formerly it was thought that if a man understood his particular business and worked hard,

that was enough to bring in profits. However, it has become apparent that technical knowledge alone is not sufficient for success in any business enterprise. Labor supply, markets, financing, and taxation are only a few of the problems that beset the modern clay worker.

These problems were brought into prominence by the growth of competition. In the old days when competition was much less keen, there was little need for a cost system because all a man had to do to make money was to charge enough. Now, he must consider his competitors and his prices must be made up on the basis of competition as well as of cost. The cost system points out to him exactly how far he may go in cutting his prices before he reaches a point that is below his cost of production. How can a man know what this point is unless he knows his costs? Of course he may be guided by his competitors' prices, but that does not mean that the clayworker is operating under identical conditions with his competitors. His labor rates may not be the same. The cost of cutting the clay and delivering it to the disintegrator may be different. He may be drying his brick in the sun, or he may be using a very modern steam dryer equipped with conveyors. He may have to ship his products a few miles down the river on barges, or he may have to use the railroads to reach his market many miles away. If any one of these conditions are different than



W. C. Mitchell, St. Louis, Mo.

those under which his competitor, whose price he has copied, operates, the cost of production will be different and trouble begins.

The solution of this problem is not to copy each other's prices and trust to luck that everything will come out all right in the end, but to adopt uniform cost methods which will insure efficient production and profits as far as is humanly possible. Uniform cost methods will make for intelligent competition. They will tell clay men what it costs to do business and therefore how much they must charge in order to make a profit. Uniform cost methods will tend to level prices, since by eliminating the causes of waste and inefficiency, the cost of operation will be about the same in the same locality.

The cost system offers the clay man even greater protection than in the case of the ordinary business man. If the manufacturer of clothes finds that he cannot sell his product at a figure that will yield him a profit he will abstain from buying material and operate on a very small basis, meanwhile putting his idle money to work earning a small but sure return. But the clay man has his material with him all the time. If the price drops, he is in a bad way, unless he can sell some of his product and earn some return on his investment.

Thus, there are times when only the most rigid economy

will yield profits. It is next to impossible to practice economy without injuring the business when one does not know his costs. An additional value that the cost system has is that it defines all the elements of business. It makes clear what share of the cost labor should take. It tells how much to charge for depletion. It shows how much to charge for overhead. The reduction in overhead to increase profits is a natural consequence of a properly maintained cost system.

The Uses of the Cost System.

Before going on with the discussion of some of the more important phases of cost keeping, I wish to call attention to the uses to which a cost system may be put. In the first place it provides for standardizing cost. That is, a standard cost per ton of clay, per brick, or any other unit which your plant produces. This function supersedes all others in importance in a clay business. First, because it offers an accurate gage of the efficiency of all production after the standard is established. Second, because it enables the clay man to price his wares intelligently regardless of market conditions. The standard cost is the only method by which the clay man can insure a reasonable return on his investment since his money is in the ground and he has no opportunity to retrench as the case with any other manufacturer. When prices are high he gets more than the cost of production charged to cost than actual conditions warrant. This builds up a reserve that enables him to charge less than the cost of production when prices are low.

The second use of the cost system is to determine the most profitable lines. Suppose a man has several varieties of clay on his property and the equipment to make several varieties of bricks, such as face brick, fire brick and paving blocks. Through the cost system he will be able to determine which type pays him best and whether it is advisable to produce one type only to the exclusion of all the rest. This will not only eliminate money losers but will point the way to much higher profits by enabling him to concentrate on those phases of his business which yield the greatest returns.

A good cost system will furnish the clay man with periodic statements that will tell him:

1. What the general financial condition of the business is.
2. What the financial operations of the business have been during the month.
3. What the extracting, manufacturing, administrative, and selling costs are.

The existence of the cost system is a great aid in establishing claims for collecting insurance in case of fire. A well ordered statement showing accurate records of what is on hand by way of supplies stands a better chance of acceptance than any statement drawn from a man's memory.

The Moot Points in Cost Keeping.

This is not the place for a detailed discussion of the proper methods of cost keeping. However there are certain questions that have given rise to debate and which it would be well to dispose of before considering the systems to be outlined in future issues of *The Clay-Worker*.

The first of these is interest on investment and its place in the cost. That there is a question at all in the mind of any practical business man as to the place of interest in cost is due to a curious confusion of interest with profit. Profit is a residue that is left after all expenses and charges have been paid off. It is the reward that society sometimes pays the business man for taking the risk of engaging in business. He can avoid the risk by investing his money in bonds that are amply secured against loss by proper collateral. The man who invests his money in this way gets a quick return. The man who engages in business is subject to a very uncertain return.

It is true that the business man cannot govern the price by including interest in his cost and that the mere act of charging interest to cost does not mean that he will get it back in his price. But neither does charging his salary or rent in the cost mean that he will get them back. That is the risk he takes when he engages in business. As a reward he has may get back much more than the interest in his investment. This extra return is a profit. However, the fact that he does not get back this interest does not mean that it is not a part of the cost. A man engages in business to earn a profit. If he should have to borrow all the money with which to go into business, he would certainly have to pay interest before he could declare a profit. Therefore, it is necessary to charge interest into the cost whether the money is borrowed or not. The only difference

between the man who borrows money to run a business and the one who does not is that the latter has sufficient funds to operate his shop without going outside for capital. The man who has borrowed money and fails to earn for any length of time at least the interest on the investment will soon be declared bankrupt. A man who puts his own money into the business will be allowed to stay on even though the business is insolvent.

If a man should consider the purchase of power-driven machinery to replace hand labor, he would compare the labor costs saved by the change with the interest on the capital invested and the cost of maintenance of the power equipment. Of course there are other items to be considered, but primarily the labor cost is matched against the interest. It would seem strange to omit labor wages from the cost of production. Then why omit the interest charge which replaces labor?

Closely associated with interest is depreciation. Interest provided for the return on the investment of capital. Depreciation reserve provides for the replacement of capital as the assets which represent it shrink in value. Neither should be omitted from the cost. Yet both often are, with the result that profits are declared that are really deductions from the capital, both principal and interest.

The methods of determining depreciation vary with conditions and with the extent to which the management is developed along scientific lines. The best way is to calculate the depreciation and the extent of reserve necessary on the basis of the expected life of the machine. Let us suppose that a steam shovel whose original cost is \$12,000 is expected to be of service for ten years. At the end of that time the scrap value of the machine will be \$1,000. There remains therefore \$11,000 to be distributed over ten years. By dividing the \$11,000 by 10, we find that the shovel's depreciation is \$1,100 every year. This forms our depreciation schedule.

This depreciation schedule is applied in the following manner: We set up a depreciation reserve account to which we add \$1,100 at the end of the first year and every year thereafter for ten years. We subtract an equal sum from the assets on the capital value of the shovel. By this method we are insuring our capital against dissolution when the equipment has reached the end of its usefulness. The necessity for replacing wasting capital makes the depreciation charge one of the most important parts of the indirect expense. Depreciation is a charge against the revenue and must be provided for before profits can be declared.

The Unabsorbed Burden

There is a tendency among clay men to make the price represent the cost of production at all times. This would be a convenient and desirable thing to do if prices were level at all times. The theory is that price covers the cost of production. However, prices are never steady enough in this country to warrant a practical application of this theory. They are either high or low, according to the turn of the market. Consequently, when business conditions are such that it is impossible to earn enough to meet all expenses one month, many clay men try to meet the situation by increasing the price the following month. This naturally results in further loss of business.

A much better way is to establish a normal rate of burden based on as many years' experience as possible. This rate is arrived at by dividing the burden for five years or more by the number of units produced within that time in order to find the average rate. By this method the poor earnings of one month will be offset by the high earnings of the next, and a balance will be maintained so that the clay worker does not have to increase his prices during the times of depression. (Applause.)

GENERAL DISCUSSION.

President Burton: According to our program the discussion on this paper was to have been lead by Joseph Buckley, of Rock Island, Ill. Mr. Buckley is not here, but Secretary Randall has a letter from him which he will read:

My Dear Randall: I have your letter of recent date addressed to me at Rock Island together with program for the Cleveland convention of the National Association. I regret exceedingly I did not know earlier that you wanted me to lead in the discussion of Mr. Baruch's paper on "Standardization Cost Accounting," for then I should have tried to arrange matters so I could attend the convention. However, we have just organized a new company to handle the sales of

the Capital Clay Company's product at Des Moines and the Tri-City Brick Company's product at Rock Island. We just opened up our new sales office in Des Moines the first of the week, so it will be impossible for me to be away.

I want to congratulate you upon securing Mr. Baruch's paper for this convention. I consider Mr. Baruch an authority on cost accounting, and I am sure his paper will prove to be one of the most interesting at the convention. There is nothing in my opinions of such vital interest to the brick manufacturers as a good reliable cost account record, and the sooner all manufacturers adopt a complete cost accounting system, the sooner the industry will be rid of an evil which has always manifested itself in the industry, because of certain manufacturers allowing competition to set their prices, rather than actual cost of manufacturing.

Again regretting my ability to attend this convention to which I had looked forward with so much pleasure, and wishing you a great big success, and all the members present a prosperous year, I am,

Yours very truly,

Des Moines, Iowa.

JOSEPH L. BUCKLEY.

President Burton: I wish to confirm what Mr. Baruch has said. I had a similar experience with cost accounting in the manufacture of bottles. They claimed it was impossible to get a correct cost account in the manufacture of bottles. I think the discussion had gone on in many of the conven-



M. E. Gregory, Corning, N. Y.

tions of the glass bottle manufacturers. They finally had an investigation, and found the very classes of material they thought they were making money on, was the thing they were losing money on, and the product they were running just to keep going was the part of the product they were making money on. I wish to emphasize the importance of this cost system, as one thing which is absolutely necessary.

Secretary Randall: Mr. Baruch is now writing a series of articles for The Clay-Worker on "Cost Accounting." It is usual for such speakers to illustrate their remarks with charts giving statistics, etc., but I asked Mr. Baruch to eliminate as much of that as possible, and let you get the charts and other details in the articles in The Clay-Worker during the year. Mr. Linnekin, who was to have been the next speaker, is not here yet; we have word he will be tomorrow, and I think we might skip on to the afternoon program. Mr. John Cahoon of Salt Lake City is in the room; he is to talk to us on "Profit and Loss in Brickmaking," and if he is ready I think we might hear from him at this time.

Recently one of the representatives of The Clay-Worker, our Assistant Secretary, Miss Wallace, was in Mr. Cahoon's office, and Mr. Cahoon told her of a system they used in the collection of accounts, etc., which had proven very satisfac-

tory. This is a very important point in any business and if Mr. Cahoon is ready, we would like to hear from him.

Profit and Loss in Brick Manufacturing.

John P. Cahoon, Salt Lake City, Utah: Mr. President and gentlemen of the convention, I have just a few words to say on this subject. I think it is either twenty-seven or twenty-eight years—at any rate in 1895 I first attended a convention of the National Brick Manufacturers' Association here in the city of Cleveland, and I want to say I have always felt when I attended one of these conventions I was well paid for my trip. That has been the case ever since I started attending these conventions, and while I have not attended all of them, I have attended as many as I could conveniently since 1895. I have been very much interested in what has been said here in regard to cost accounting system and everything of that kind. We have spent considerable money in trying to find just how much our brick were costing us in every particular part of the plant. I think it is possible to go too far, go into too many details, which makes it expensive. We have been trying to work out something that would be satisfactory to our people.

In regard to the profit and loss. We are interested, of course, in the profits particularly, and the thing to arrive at then is to get down to details and determine just what your costs are so you can determine just what your profits are.

Another thing we have found very important, just as Mr. Randall has said. When you have got your brick manufactured, and when you have sold them, it is important to get



John P. Cahoon, Salt Lake City, Utah.

your money. That is one thing we have studied in Salt Lake, and we have finally got to the place we are now. We found we had a number of accounts on our books we could not collect. One man was owing us for several jobs, and the same was true with others in the business.

I said to one of our competitors, "Would it be agreeable to you and our other competitors here to get together and determine just how much we are carrying on our books for the contractors?" He said he would meet us. So we got together and we found the contractors were being carried by the brick manufacturers. We each one had the same ones on our books for several jobs. We were getting tired of it, and we talked the matter over and finally determined to have another organization, or rather to organize another company. Before we did that, however, I went around and talked to some of the contractors, and said, "We are getting pretty well tired of the way things are being carried on, and we want to see if we cannot adjust this matter and put the brick business on a cash basis." One contractor said, "That is absolutely all right. The only thing we ask you to do is to enforce it. If you are going to make it a cash business, then let every one of us pay cash. I know and you know you could collect your bill with me almost anytime you want to, but there are lots of men I am competing with, whom you never know when you furnish them brick for a job, when you can collect the amount due."

Well, we organized our company, and called it the Finance Company. You can call it any name you want to, but we all agreed to send our bills, or turn our bills over to the

Finance Company. On the bottom of our bills, we have a little statement, "If this bill is paid on a certain date, there will be a discount of 15 per cent." Say, if the brick were delivered Wednesday, if the bill was paid by the following Tuesday, the discount would be allowed, and under no circumstances whatever was that discount allowed after that date. To enforce this, we arranged with this Finance Company to pay the bill, if it was not paid by the man, and the benefit of the discount taken. The discount goes to the Finance Company, which then collects the bill in full from the man. So far, when the week ended Wednesday night, and we had sales up to \$3,000 or \$5,000, we knew that on Tuesday night we would have the money. I think we put it on Wednesday night so that the following week, or Tuesday, we would have what money was due us, less the discount. If the individual did not pay up then the Finance Company took it, and paid the bill, so we got our money. Then the Finance Company took the bill and collected it.

Practically all of the brick manufacturers in the states of Utah and Idaho belong to the organization, though they are fifty or 100 miles away. Every week when we get done with the week's work, we know every dollar coming to us and we have it on the following Wednesday or Tuesday. It has proved the best method we have ever got hold of.

The Finance Company has made no profits more than the cost of operating and doing the collecting, but everyone of us at the end of the week, know we have so much money coming to us, and that we will get it the following Wednesday. We have an arrangement so that if any of the contractors fail to pay and we have to put a lien on the building, the party that furnished the brick has to furnish the information to the Finance Company so they can protect themselves against the contractor. We find the scheme works out very satisfactorily in our part of the country, as I told the Assistant Secretary when she called on me at my office last fall—when I first came to the convention in 1895 I first made her acquaintance and that of Mr. Randall—and I was telling her about our plan, and she asked me to say something here to the convention about it. I told her she knew the kind of a speaker I was, but I finally promised her I would talk on this subject, and if it proves of any benefit to you, I will be satisfied. (Applause.)

Mr. Wilson: What is the discount allowed if they meet the bill promptly?

Mr. Cahoon: We stamp on the bills, when we send them out, "The bill will be subject to a 15 per cent discount, if paid by a certain date."

Mr. Wilson: Suppose the Finance Company is not able to collect the bill at all. Does it stand the loss?

Mr. Cahoon: We haven't had a case of that sort. But it is provided that the party who sold the brick to the firm or individual that the Finance Company is unable to collect from if the Finance Company has to protect itself with a lien or a suit, the company or party that sold the brick to the contractor is responsible.

Thomas Kennedy, Swansea, Ont.: Is the stock in the Finance Company held by the brick manufacturers themselves?

Mr. Cahoon: Yes. Every one of the brick manufacturers put so much money into it and took so much stock in the Finance Company, and if there is any dividend, it comes to them, but so far it has just been building itself up. So far, the Finance Company pays all the accounts, but it has not paid any dividends. It was not our idea to make it a profitable concern in that sense. I want to say again I have been coming to these conventions for the last twenty-seven or twenty-eight years and I calculate to continue for another twenty-seven or twenty-eight years. (Applause.)

President Burton: I think we have got enough pointers or advice from Mr. Cahoon, in this one talk of his, to well pay any of us for the cost of attending this convention. An old friend of mine announced he would keep no books. He was doing a cash business. If a customer came in and wanted to buy goods and had no money, he would say, "I will loan you money and take your note, but I don't know how to keep books." He died two or three years ago and left a large estate, the largest of any man in that community running a mercantile business. He always sold for cash. If an irresponsible man or men came to him and offered to give him

their note, he would ask them if some one they knew who was responsible would go on their paper; he would tell them if the people they knew did not have confidence enough to do that, neither would he. I think Mr. Cahoon and his associates have struck the right trail, and I think the sooner all brick men follow their example, the better off they will be. I would like to have this discussed.

Secretary Randall: Mr. Joseph T. Byrne of Philadelphia was to have led in the discussion of this paper, but he does not seem to be in the room just now. He has been here.

Mr. Kennedy: We have the same sort of an arrangement in the sewer pipe business in our section of the country, and we have found it most satisfactory. We did not lose one dollar last year in bad accounts. It is practically the same arrangement.

President Burton: It is almost one o'clock, and I think it will be well to adjourn for lunch. Hope you will all be prompt so we may convene for the afternoon session at two o'clock.

The complete verbatim report of the remaining sessions and the splendid Banquet will appear in full in the March 14th issue of *The Clay-Worker*.

LOBBY TALKS AND OBSERVATIONS.

Casper C. Mayer of Bridgeport, Pa., was the star performer as an extemporaneous speaker. His response to the address of welcome made with but a moment's notice was apt and appropriate. Later his narrative of his observations while abroad recently, held the rapt attention of every one present and well deserved the applause which followed his closing remarks. He was No. 1 on the roster and is an A No. One member in every association activity, particularly at the after-dinner dance.

For the first time, according to the oldest conventioner, John Moroney, of the Chicago Brick Machinery Co., Chicago, Ill., forsook his old pals on the second floor and established himself on the fourth floor with the Chicago delegation. He was missed sadly, but will be forgiven if he promises never to do it again. We are wondering if the fact that Ireland is free, had anything to do with John's seclusive tendency. It sure is contrary to his nature and reputation.

Jotham Post and Mrs. Post of East Williston, Long Island, were the first N. B. M. A. delegates. They arrived Sunday morning and "Joe" gave strict attention to the business of the convention, never missing a session. They left the following Sunday noon for Tarpon Springs, Fla., where they will loiter for a month or so. "Joe's" one complaint was the fact that the past season his brick have been sold before they were even cold.

Geo. Parry of Boston was much in evidence, both in the convention sessions and the lobby. At the Smokerette he divided honors with the song leader in rendering "Sweet Adeline."

The Lucktenbergs were numerous and active in all the convention affairs. Julius again rendered signal service, as chairman of the Committee on Resolutions and "Bill" did fine work on the convention floor and in the lobby talk.

As of old, Wm. Hammerschmidt, of Lombard, Ill., occupied a front row seat at every N. B. M. A. session. He was accompanied by his son, Alfred. They drew number buttons 101 and 102.

Mr. and Mrs. Wm. Sankey of Pittsburgh, graced the smokerette and banquet. "Will" received number button 254, which was lost because of a defective pin and he was given a new number and in that way was omitted from the printed roster, but he was "on the job" throughout the sessions.

The Clipperts, six in number, of Detroit, Mich., was among the early arrivals and George and Charlie were the first to register at the secretary's headquarters Monday and received buttons number 2 and 3.

Alfred Pettit, Brooklyn, N. Y., came early and stayed late. He missed no detail of the convention and laid by a stock of practical pointers that will pay big dividends on the convention trip, to say nothing of the joy of meeting his many friends.

The new member of the official family, Mrs. John W. Sibley, seemed to vie with Mars John in popularity and John has for many years been among the most popular of the old guard. His skit at the Smokerette was a delight to all present.

Thos. F. Goldrick, Kingston, N. Y., proved a chip off the old block. His father "Phil," one of the old-time regulars, was unable to attend, but was ably represented.

John T. Hummert, Quincy, Ill., ran a close race with Wm. Hammerschmidt for the honor of being the first one in the convention hall at all the N. B. M. A. sessions. None among the faithful is more faithful than he, and he is a lover of rhyme as well as of the brick business.

M. E. Gregory, Corning, N. Y., was accompanied by his son George. The latter took notice of all the convention proceedings having to do with the production side of the industry.

Wm. Burgess and wife of Toronto were among the first to arrive and the last to leave. He was ill and unable to attend the Canadian convention, so was attentive to every convention detail and so made up in part for time lost at home.

Wm. Conway, Sr., Philadelphia, was unable to be present, but his son, Will, Jr., was on hand, accompanied by his competitor, Jos. T. Byrne. They may well be termed the Damon and Pythias of the brick business.

H. H. Mayfield, superintendent of the Salmen Brick & Lumber Co., Slidell, La., was among the busiest men in Cleveland. He was after information relative to tunnel kilns and got it, as his boss Fritz Salmen will learn when he gets the returns.

Jake Stocke, Jr., St. Louis, was so busy telling of his device for making rough texture press brick, sample panels of which were on display in the lobby, that he failed to hear the call boy who paged him, and so missed the opportunity of acknowledging the honor of election as third vice-president.

Samuel Geijsbeek, Seattle, took the palm as long distance delegate. He renewed his youth, so to speak, this being his first convention for a number of years. Back in the early part of the last century he was a regular attendant.

Betty Bell, the pretty mascot of the Burton-Townsend Brick Co., Zanesville, Ohio, was the recipient of many compliments and much attention, but she was not embarrassed by same, being but four years old. May she attend many conventions.

Thos. Kennedy, Swansea, Ont., the dean of the Canadian contingent, was one of the "glad hand" crowd and was kept busy by his host of friends in the N. B. M. A., of which he has been an active member for many years.

D. Warren De Rosay, Corry, Pa., reported early Wednesday. He stated that the brick business was never better in his section and expects 1923 to be the biggest year in the history of his company.

I. A. Ryttenburg, Sumter, S. C., commonly known as "Rytt," came late and left early, but he made his presence felt while there. His talk on "Producer Gas" was like his famous Airdale brick, highly colored, so much so, that President

Burton served notice on him that he would be on next year's program. He stepped lively both at the smokerette and banquet.

Miss Stella Fox, the "main stay" in the office of the Burton-Townsend Co., Zanesville, Ohio, was the proud wearer of No. 178, and gave close attention to the business sessions and particularly to the paper and discussion on Cost Accounting.

Jay Terry, Kingston, N. Y., reported all well in the Hudson River district. He predicts a big year for the brickmen of that locality. "Jay" is one of the progressive leaders, being among the first to use a steam dryer, having installed a Standard in 1916.

Grant Dibert, Pittsburgh, after an absence of several years, was again an active participant in the business and pleasure events. He is state vice-president of the N. B. M. A., for Pennsylvania, and in years gone by was a conspicuous figure at all the meetings.

Ellis Lovejoy, while one of the silent forces of the convention during sessions, was much sought by those desiring information on drying, burning and other plant problems. He is not at all backward in giving advice when it is sought, but believes that what is worth having, is worth asking for. Anyone wanting practical information is lucky, if they can attach themselves to his buttonhole.

J. Fred Smith, Omaha, is a veteran of the association, who remains active and vigorous in the pursuit of trade lore, but it must be of a practical character to hold his attention.

W. T. Demuth, New Philadelphia, Ohio, enjoyed this, his second convention, immensely. He needed no introductions this year. He is a real buttonholer and gives as cheerfully as he receives, in all matters pertaining to the brick business.

E. O'Neill Kane, Jr., Kushequa, Pa., is a new recruit and promises to develop the clever talents of his father, Elisha Kane, who has the faculty of saying the right thing at the right time, as evidenced by the discussion of "A Practical Program for Better Business."

Wm. D. Gates, Chicago, the original buttonhole artist, enjoyed the privilege as of old. His son, Major, was kept busy answering the call for information on automatic stokers and the Gates' method of coloring brick and terra cotta.

J. F. Reynolds and wife of North Haven, Conn., and son, J. E. Reynolds and wife, made a happy quartet. They constitute a good New England delegation all by themselves.

North Dakota had one representative, Mr. John H. Holman, of the Hebron Fire and Pressed Brick Co. "My convention trip is a long one," he said, "but a very profitable one. The acquaintances formed and the information gained is invaluable." Mr. Holman returned via Indianapolis and Danville, Ill.

The Alliance (Ohio) Clay Products Co. was represented by more than a dozen of its employes, under the leadership of J. B. Wilcox and his son, Oates. They garnered information that will pay big dividends the coming season.

Peter Erickson of the J. T. Davie Brick Co., Mead, Wash., was accompanied by his son, C. F. Erickson. They did some good team work.

The Hoosier delegation was numerous and active, collectively and individually. Jas. Entwistle of the Terre Haute Vitrified Brick Works, said it was his first N. B. M. A. convention, but he hoped to attend many more.

A notable and most gratifying feature of the convention was the number of sons who accompanied their fathers. This infusion of new blood of the good old stock insures the future of the parent organization. Among the missionaries, A. A. Oldham of the Bonnot Co. of Canton, Ohio, was accompanied by his son, L. E., and, of course, R. C. Penfield of Bucyrus, Ohio, who has missed but one or two of all the 37 con-

ventions, was accompanied by his son, Preston, who is himself becoming an "old-timer."

George E. Sutherland and Mr. and Mrs. H. E. Kenyon of the Standard Brick & Supply Co., Charleston, W. Va., motored from Charleston to Cleveland and on Thursday motored to Alliance and inspected the Freese equipment of the Alliance Clay Products Co., and the Alliance Brick Co.

L. P. Isaacs of the Kanawha Brick Co., Charleston, W. Va., proved he was not superstitious by accepting number button 113. Contrary to the general impression 13 is a lucky number and we hope it will prove so in this case.

LACLEDE-CHRISTY DOINGS.

TWO INTERESTING and important facts are set forth in a recent bulletin of Laclede-Christy of St. Louis. One is the announcement that this concern recently acquired 46 more acres of fire clay, the same being the assets of the Grand View Fire Clay Co., located in the famous Cheltenham Fire Clay district of St. Louis. The other important announcement is in the pictorial showing of a remarkable test given Laclede-Christy patented segment sewer blocks where they carried a load of 198,316 pounds. A test was recently conducted at one of their plants for the benefit of the city of Paducah, Ky., which was represented at the test by Henry Pullian, Commissioner of Public Works and city engineer of Paducah. A complete section of sewer was constructed 48 inches in diameter, 10 feet 2½ inches long and it was given the strength test by piling pig iron till the load reached a total of 198,316 pounds or the equivalent of 3,652 pounds per square foot. Under the full load there was a deflection of 1.87 inches. and at the end of ten days the sewer section had stood without any further deflection. The result is a decided victory for segment sewer blocks and for clay products in the sewer building field.

STRONG ENDORSEMENT OF THE TECKTONIUS KILN BAND FASTENERS.

AS THE READER may see by turning to page 167 of this issue, many of the clayworkers of the country have used the Tecktonius kiln band fasteners with great satisfaction. Another user who is much pleased with the Tecktonius appliances is Mr. R. J. Perry, of The Woodland Clay Company, whose letter of commendation is given in full:

The Woodland Clay Company, Woodland, Ill.

The E. C. Tecktonius Mfg. Co., Racine, Wis.

Gentlemen: In reply to your letter of January 13, relative to the type of kiln band fasteners and equipment used by the Woodland Clay Co., at Woodland, Ill.

We are very much pleased to state that practically all of our kiln equipment, and especially the kiln band fasteners, were made by your firm, and we can positively say at this time that we do not believe that there are any fasteners, or, for that matter, any iron equipment for the construction of kilns, that would give any better service than those manufactured by your firm.

Yours very truly,

THE WOODLAND CLAY CO.,

By R. J. Perry, Receiver.

If we are to have a law regulating trade associations, why not have in it a clause requiring people to be regular in the payment of dues and in attending convention sessions?

ANNUAL CONVENTION C.B.M.A.

Advertising, Building Codes, Tests, Accounting, Publicity Work
and other Important Topics Discussed at Cleveland,
February 5th, 6th and 7th, 1923.

THE FIFTH ANNUAL Convention of the Common Brick Manufacturers' Association has passed into history as the most enthusiastic and earnest series of sessions ever held during the past five years of its life.

Cleveland, Ohio, Winton Hotel, was the meeting ground for a goodly number of manufacturers during the week of February 5th. The sessions were held in the Rainbow Room and just outside in the foyer were exhibits of unusual merit that attracted the eye and created considerable favorable comment. On large bulletin boards in one end of the corridor were large cards on which were neatly arranged clippings from daily papers showing the Association's free newspaper publicity, also some building show exhibits, Association literature of all kinds, including "Three Little Pigs," "Ideal Wall," newspaper ads, "Brick How to Build and Estimate" and photos of "The Famous Sixty" and "Brick Wall Tests," a copy of "Building Code" and the front covers of the various magazines in which advertisements were placed during the past year.

Tables along the walls near the elevators held programs and various pieces of literature bearing on convention work and here the delegates registered and were adorned with the button insignia of the Association. The total registration showed 162 manufacturers representing 110 firms. The largest delegation, as usual, was that of the Illinois Brick Co., with 17 representatives; Alliance Clay Products Co. had nine; Cleveland Builders, six; C. P. Merwin, three, and nineteen other concerns with two representatives each.

The Convention was called to order by President Bryan at 11 o'clock Monday, when he welcomed the members and those of the N. B. M. A. present, and told of his deep appreciation of the fine audience of brickmakers present. He made an informal speech telling that the activities of the Association had been mainly in the hands of the executives and office men who in their proper turn would later explain the year's work in each department in detail. He thanked its Board of Directors, officers and members for the interest taken in the work and then read a short address in which he likened the industry to a horse with blinders on and pointed out that the Association had removed these blinders and that the manufacturers were now seeing correctly the real value of Associational effort. He stated that some brick manufacturers take no heed of cost, that they are like a horse with a halter on, being led by the prices quoted by their competitors. He mentioned the fact that the harm lies in losing money when you don't know it and urged closer attention to real cost finding so that each one would know the absolute cost of the product. He emphasized the importance of publicity, stating that while the manufacturer knew he had the best material the public didn't know it and that the full hearted co-operation and support of the Association was the best means of reaching the correct goal.

Mr. Charles A. Bowen, Cleveland, Ohio, the assistant to the president, who has rendered a valuable service to the Association during his first year's work, building up the membership and instilling higher ideals into the manufacturer, made a report in which he eulogized President Bryan, the members of the Executive Board, office force and laymen. As a result of his visits into twenty-eight states where meetings were held, he secured 75 new members and 100 renewals.

He traced the history of the Association, stating it was like a locomotive pulling up a heavy grade and with its puffing and blowing seeming to say, "I think I can do it, I think I can do it," and then after reaching the high point and starting off on the level for a long smooth journey ahead, chugging along and seemingly saying, "I knew I could do it, I knew I could do it."

He declared that the real value of the meeting would be in the full and free discussion of the many angles of the business and that the individual would get out of it, in proportion as much as he put into it.

Secretary-Manager Stoddard followed with his report which was an informal talk on Association affairs and purposes. He stated that conditions were good and that the outstanding thing in the year's work was the general character of the men they had been able to attract to the Association and that through the Association work the individual member is becoming proud of the fact that he is a brickmaker.

The motive back of the Associational effort, he declared, was the rendering of a real service to the public, the architect, contractor, builder, and the entire membership, that their plan service exceeds any other associational work and that the investigations that had been made and are being made are giving them all a better knowledge of the value of the product.

He eulogized President Bryan, Assistant Bowen, and the office force, telling how diligent and untiringly they had worked for the best interests of the craft and stated that while the membership in 1922 totaled 335, that old members that had renewed their three years' contract totaled 165, and 104 others were being carried on the delinquent list, 75 new members had signed up and that the prospects for enlarging the membership still further were very bright.

Twelve thousand five hundred inquiries were received for information during 1922, but 9,000 inquiries had already been received in the month of January, 1923, alone, and even though \$22,000 less for advertising was expended in 1922 than in 1921, 141,651 pieces of free literature had been sent out during the past year, that 22,250 Brick Manuals had been printed, as well as 130,000 "Your Next Home," 100,000 of which had been widely distributed by the Haskin Syndicate.

He was very optimistic, regarding prospects for 1923 and closed with the statement that the Association plowed the ground and planted the seed and it was the individual that reaped the harvest.

Ernest S. Barkwill, Cleveland, Ohio, read his Treasurer's report in detail. The advertising expense was over \$60,000; general expense over \$48,000, and receipts over \$100,000.

William Carver, Cleveland, Ohio, read his report of Associate Architect which dealt particularly with the government building code in which the Ideal Wall is being favorably specified in walls to height of 20 ft. plus 5 ft. for gable. He stated that the Bureau of Standards test showed that the Ideal Wall 8 inches thickness rowlock type with cement lime mortar, when put under eccentric load proved 24 per cent stronger than solid 8 inch brick walls, tested same way.

He detailed work at building shows, and Building Officials' Conference, and urged members to take advantage of plan service, to send in designs and working drawings of attractive brick homes to facilitate his work.

D. Knickerbacker Boyd, Philadelphia, Pa., Consulting Architect of the Association, made an informal talk. He prefaced his remarks by stating that he had real pleasure and great satisfaction in rendering whatever service he could for the industry. He stated that the Association was a point of contact between the industry and the government, detailed the various and numerous committees of which he was chairman or associated with, told what he had been doing towards creating better building codes, improving conditions and the spreading the gospel that common, honest, good old fashioned brick is the best material in building construction.

Harry W. Conway, Cleveland, Ohio, made a report of Consulting Accounting Expert. He detailed what had been accomplished during the past four years and especially referred to the Cost Accounting School they had created April, 1922, and the goodly proportion of the membership that was taking advantage of receiving these lessons by mail. One hundred fifty members requested the lessons. (After each afternoon's session, Mr. Conway held a Cost Accounting School in the convention hall for the benefit of the delegates present.)

ment plan to buy a car and get a taste of real living, which ultimately resulted in his earning more money, moving out to the rural sections and finally building a brick home. He declared facetiously that he found the Ford to be the best seven passenger car and the Packard the best two passenger car.

The address was very entertaining and educational, hence, enthusiastically applauded.

Ernest C. Roberts, Advertising Manager of the Cleveland Builders Supply and Brick Company, read an interesting paper on the subject, "A Local Advertising Campaign That Paid." He stated that national advertising should be backed up by local advertising, that national advertising appealed to the people and the ultimate consumer but that local advertising and publicity was necessary to make it productive.

He detailed what his company was doing in display advertising and publicity, mentioning their outdoor exhibit (featured in the January Clay-Worker) and showed a clever miniature sign board on which appeared the words "One Wall of Brick Outlasts a Dozen Coats of Paint. Build of Brick and Save the Difference." In one end of the model was a



Ralph P. Stoddard, Secretary,
Cleveland, Ohio.



Charles H. Bryan, President,
Detroit, Mich.



Charles A. Bowen, Assistant to the
President,
Cleveland, Ohio.

The Vice Presidents, all of whom were to be chairmen of sessions in their respective turn, were introduced and made informal talks after which President Bryan announced his committees and called upon in turn, Mr. Wm. Schlake, first President of C. B. M. A., and T. A. Randall, Secretary of N. B. M. A., both of whom were given the glad hand.

Monday Afternoon Sessions.

Vice President Wm. N. Cary, Albany, N. Y., presided at the Monday afternoon session.

He introduced Edward S. Jordan, President Jordan Motor Car Company, Cleveland, Ohio, who made a chalk talk on the subject, "The Greatest Business in the World." Naturally, he considered the transportation business the greatest in the world. He gave first the fundamentals in business then reviewed the history of transportation and showed the automobile industry's relationship to the brick business. He said the greatest thing that ever happened to the industry was when Ford put the price of his machine at \$298. It gave the man who had never owned a home a chance on the \$5 install-

small room in which a miniature brick home with suitable scenery was illuminated. He spoke of his school talks, illustrated by means of an exhibit which is made a part of the Physical Geography course in the Cleveland schools. This puts over the idea to an interested audience that takes it back to the family circle.

Following this paper was a long discussion on advertising and local association work, lead by Walter Simons, The Simons Brick Company, Los Angeles, California. He emphasized the fact that the one big principle in advertising was truth and that this should extend throughout the business. The modernized idea in the construction of the rowlock brick hollow wall now styled the Ideal Wall originated by Mr. Simons, has been a great business boosting proposition in his section of the country.

"What the Bookkeeper Says," by Jordan A. Pugh, Norfolk, Va., was distributed in pamphlet form for careful study. Mr. Pugh modestly stated that he was not a talker and had gotten the talk up in this shape with the hope that some good might be gleaned from it. This paper is published on another page in this issue.

Tuesday Morning Session.

Tuesday morning John P. Cahoon, Salt Lake City, Utah, called the third session to order.

Robert C. Griswold, Cleveland, Ohio, made a talk on "Twin Sisters—Advertising and Selling." He analyzed advertising and selling, giving the six chief elements in handling the business as favorable attention, interest, desire, action, confidence and satisfaction and pointed out ways and means of securing and promoting same.

C. A. Bowen made a talk on Constructive Co-operation, which he says is the most important thing in any industry, that no man can live within himself and in this day and age the highest type of men are associating together for the common and combined good. He cited the need of local associations and showed their proper relationship to national associations. He urged further study of building codes and ordinances, group advertising, more careful study of costs and more united effort in co-operation. He suggested that local associations make plans to collect all assessments and arrange to turn over the proper proportion to the C. B. M. A.

There followed an experience meeting on local association work, in which valuable suggestions were made by Messrs. Boyd, Philadelphia, Pa.; Pugh, Norfolk, Va.; King of Connecticut Assn.; Bohnsack of Chicago; Simons of Los Angeles; and Hollowell, Secretary of the Face Brick Manufacturers' Association.

Tuesday Afternoon Session.

Tuesday afternoon's session was presided over by George Parry, Boston, Mass.

The first speaker was Charles C. Parlin, Philadelphia, Manager, Commercial Research, Curtis Publishing Company. He gave a long talk, illustrated by dozens of charts emphasizing the value of the Saturday Evening Post and Ladies' Home Journal as advertising mediums. The talk was similar to his talk made before the American Face Brick Convention, West Baden, Ind., in December. His talk was most enthusiastically received and regarded as one of the hits of the meeting. He detailed the fundamentals of good advertising, stated that the manufacturer, by the right kind of advertising, can not only go out and build up ideas he wants in building, but by the printed page put in the owner of a brick home a greater pride, and place in his mouth the real arguments that will convert his friends to brick and burned clay construction.

He stated that too many people were apt to think of circulation in terms of quantity while the real power in advertising was in the quality of circulation. The Curtis publications had both. He showed an advance copy of the Feb. 10th issue of the Saturday Evening Post in which the C. B. M. A. had a full page advertisement. He urged the members to cash in on this to the fullest extent by doing everything possible in calling attention to this page all on their local mailing lists, including architects, contractors, etc. His detailed explanations of how the Portland Cement people, and California fruit and food industries had built up big demand through co-operative advertising were most interesting and instructive.

Secretary-Manager Stoddard then reviewed the work of the Association in advertising, the boosting of the Ideal Wall, financing of the whole work, and gave the objectives as: first, the building up of the membership; second, the building up of funds in the local associations to take care of C. B. M. A. assessments, or rather dues, and third, the instilling into the minds of the individual the importance of more attention to building codes, bricklayers' schools and other local matters. He stated that nothing had been done harmful to the face brick industry, that both brick associations should fight the attack being made by substitute materials and that he hoped some day the face brick and common brick associations would have one combined common advertising fund. He stated that there was from \$20,000 to \$30,000 outstanding in delinquent dues and that a quarter page advertisement in the Ladies' Home Journal for April had to be cancelled because of lack of funds. The full page in the Saturday Evening Post cost \$7,000. He urged the members to send in their dues promptly and to follow up all inquiries sent out.

At this point was introduced a Resolution of Condolence on the sudden death of the mother of President Bryan.

D. Knickerbacker Boyd, Philadelphia, made a most inter-

esting talk on the subject "Synthetic Brick", detailing what inferior materials, such as concrete, sand lime and cinder brick industries were doing to get recognition and what the C. B. M. A. should do to counteract the effect of the propaganda and keep these from making inroads into the clay brick industry. He detailed the steps being taken to give the people of the nation proper protection from inferior materials and improper uses.

Wednesday Morning Session.

The Wednesday Morning session was presided over by E. C. Shimer, Allentown, Pa.

Leonard P. Ayres, Vice Pres. Cleveland Trust Co., delivered a fine talk on "The Construction Outlook for 1923." According to his belief the first half of the year will be record breaking with a slowing up the latter half of the year. He reviewed periods of depression and periods of prosperity sighting the fact that little buying was done on falling markets and always a great deal of buying on a rising market, and that the manufacturer by close observation of this principle could safeguard his business. He declared that this was the harvest time, that the tide was coming in and it would be some time before the ebb would start.

"What the Brick Tests Proved," was the subject treated by Dr. A. H. Stang, U. S. Bureau of Standards, Washington, D. C. He explained the investigations made by the Bureau on solid brick walls, also ideal hollow walls and declared the results showed:

1st. That about 30% less of material was used for Ideal Wall than for solid wall.

2nd. That the time required to lay the Ideal Wall was about the same as that of the solid wall therefore the labor costs should be about the same.

3rd. That the compressive tests under central loading of 8-inch walls both the Ideal Wall and solid brick wall showed that they had equal strength whether lime cement or cement mortar was used.

4th. That under central loading the 8-inch solid walls laid with cement mortar were 24% stronger than if laid with lime cement mortar and 84% stronger than if lime mortar had been used.

5th. That when load was applied with an eccentricity of 2 inches the 8-inch Ideal Walls were 24% stronger than 8-inch solid walls when lime cement mortar was used in both.

6th. That the 12½-inch solid walls were 15% stronger than the Ideal Wall type No. 1 and 87% stronger than type No. 2 of the same thickness when lime cement mortar was used for all of them,—and

7th. That when laid with lime cement mortar the 12½-inch solid walls were 15% stronger than the 8-inch solid walls. The 12½-inch Ideal Walls Type No. 1 were as strong as the 8-inch Ideal Walls which in turn were 64% stronger than 12½-inch Ideal Walls type No. 2.

Wednesday Afternoon Session.

The Chairman for the Wednesday afternoon session was Jordan Pugh, Norfolk, Va. The first formal paper on the final session was that of R. A. Bole, Columbus, O., Supt. of Bureau of Mines. This detailed the work of the Joint Research Council in that portion devoted to investigations of burning of common brick.

He described the work on three different types of kilns; told of the general practice requirements and gave figures showing improvements made by the experimental crew on the second and third burns. On kiln 1 sixty-seven hours were saved, a reduction made of 457 pounds of coal per thousand brick and no salmon brick while the general practice was 5,000 salmon out of 78,500 burned. No. 8 kiln semi scove, permanent wall using oil as fuel burned in 71 hours with 33 gallons of oil and 14% salmon out of 610,000 brick while practice was 86 hours, 41 gallons oil and 6% salmon out of 715,800 brick. No. 12 kiln, 26 foot round down draft with forced draft showed 52,200 brick burned in 84 hours, with 1,076 pounds of coal to thousand and 1.8% salmon as against general practice of 54,400 brick in 101 hours with 1,300 pounds per thousand and 2% salmon.

Following discussion on this paper the nominating committee reported the selection of directors who immediately met for consideration of election of officers.

(Continued on page 170.)

AMONG THE LIVE WIRES AT CLEVELAND CONVENTION.

A DISTINCT adjunct of any N. B. M. A. Convention is the representation of clayworking machinery and equipment firms which gives through exhibits, moving pictures and button-hole talks, the up-to-the-minute information regarding improvements in various types of clayworking appliances.

Since the N. B. M. A. is an educational organization that has to do with plant problems and the improvement of the product, the clayworking machinery firms through meeting the needs of the trade and bringing forth new ideas in labor saving devices are very helpful to the entire industry and rightly go hand in hand with our oldest organization which has done so much to build up the clay craft.

The Cleveland Convention afforded a golden opportunity for the machinery contingent, the entire second and third floors of the Winton Hotel were given over to them and there was an overflow to other floors.

The large bulletin board of the N. B. M. A. was in place opposite the elevators on the second floor and gave an alphabetical list with room numbers of all exhibitors in attendance. The walls of the hall were covered with placards of the various firms, giving room number, and clever statements appealing to the delegates.

Large banners covering the entire wall from floor to ceiling told the delegates that the Hatfield-Penfield Steel Co. was there with bells on. This bunch of live wires held forth in rooms 219-222-223-244-246 and 248 and had fifteen representatives present during the week. Their main display room was in 248 where were exhibited literature, catalogues, etc., of their complete line of clay plant equipment and labor saving devices. Photographs of Haigh Kiln, Diesel Engine, gasoline locomotive and new automatic soft mud brick machine and new dumper adorned the walls. Of especial interest was their manganese steel for repair parts for clay machinery. This company had a host of friends in their headquarters room throughout the week and reported that business was splendid. They gave out hundreds of note books, very attractive souvenirs.

The American Equipment Company was represented by R. C. Penfield, Preston Penfield, Claude Fuller and C. P. Mertens. They were kept busy answering questions on their new automatic soft mud brick machinery. In room 244 they gave a continual moving picture show. Preston Penfield was chief operator and had on hand thirty reels showing old time methods and improved methods. The film showing automatic making and handling of soft mud brick at Duffney Brick Plant, Mechanicsville, N. Y., was considered the greatest revolution in clayworking machinery ever shown. One has to see this operation to thoroughly appreciate the great strides being made in clayworking equipment. The film showing present method of setting brick in Chicago by setting machine and loading trucks by machinery was very interesting. With this equipment they can load a truck with four thousand brick in five minutes, while if done by hand it takes three-quarters to one hour to accomplish same.

William Durbin came with sunny smiles and remained happy throughout the week. We presume he will remain happy for some time to come, for his firm, the Anderson Foundry and Machine Company, Anderson, Ind., is doing a "whale of a business" and orders for their new gas engine are keeping them jumping.

The Bay City Dredge Company was represented by Morgan and W. S. Ramsey. In room 450 they exhibited photographs and literature boasting their one man excavator, a novel machine built and designed to meet requirements of small and average size plants where capacity ranges between 25,000 to 100,000 per day. This is either gasoline or electrically driven, with track or caterpillar mounting and is sold to any plant using four men at machine with guarantee that the machine will pay for itself in less than ten months.

The Bonnot Company, with A. A. Oldham, L. E. Oldham and A. D. Cochran, representatives, exhibited in room 214 catalogs and advertising bulletins of their complete line of

clayworking machinery. All the delegates were interested in their Timkin Tapered Roller Thrust Bearing for brick machine, dry pans, etc., which is backed by the national reputation of the Timken Roller Bearing Company, Canton, Ohio. A splendid brown leather pocketbook and a leather-bound memorandum book was presented each visitor.

H. Brewer & Company, Tecumseh, Mich., was represented by E. E. Berry. In room 256 old friends and new had a good smoke and had the opportunity of studying latest bulletins on this firm's well known clayworking machinery. Mr. Berry stated that the convention was the best he had attended in quite a number of years.

The Boss System of Burning was explained by John C. Boss in room 257. The Boss Engineering Company, Elkhart, Ind., is finding little time for recreation these days for they are installing their system on quite a number of plants in different parts of the country.

The Brown Instrument Company, Philadelphia, Pa., was represented by George W. Keller. He cleverly directed the delegates to his room by means of a sign placed on the second floor clock with face of clock showing through. Above was the line, "Now is the time to save \$ \$ \$ in burning, by using Brown Instrument." He had a display of Brown High Resistance Duplex Recording Pyrometers, Brown Recording Thermometers and Draft Gauge in room 328.

W. D. Richardson of the Ceramic Engineering & Construction Company, was button-holed by numerous clayworkers who wanted advice in clay plant construction and operation.

The Chambers Bros. Company, Philadelphia, Pa., was represented by Edward E. Krauss, vice-president, and Frank Winkdolph, secretary of the firm. They had their headquarters in room 264. Here was distributed literature describing the firm's well known complete line of clayworking equipment. Many delegates inquired for Mr. and Mrs. Howard Chambers, both of whom are nearly always in attendance at the national convention. Illness in the family prevented their attendance. The company's representatives were live wires and were always on the job.

Of course A. J. Dunn and his wife were there representing the Chase Foundry and Manufacturing Company. Inquiries for Chase Cars and equipment were most gratifying and the convention was a big success in every way, according to these two happy ever-present representatives.

Guess we will have to cut out this "King of Ireland" stuff with present conditions in the land of the Shamrocks, but seemingly John J. Moroney of the Chicago Brick Machinery Company, has not lost his love for the green for that was the color of his souvenir pencils and note books. John looked prosperous, felt prosperous and from reports his general line of equipment is much in demand, so he is prosperous.

The Chisholm, Boyd and White Company, Chicago, was represented by S. S. Chisholm and L. W. Flood. Harry Flood was prevented from attending through illness, but we are glad to say that he has fully recovered. These are busy days for this concern but you can bank on it that these old familiar live wires had time to give the delegates information regarding their general line of dry press machinery and dry pans.

O. W. Dunlap of Dunlap Manufacturing Company, Bloomington, Ill., told the delegates about his perfect clay screen. They have over 1,000 satisfied users. All who registered in his headquarters, room 323, received a surprise souvenir of an automobile duster on their return home.

The Eagle Iron Works representatives, Geo. W. Aulman, of Des Moines, Iowa, and J. Powell, of Brooklyn, Ind., were kept busy giving details of the Eagle Shale Planer, the demand for which has made it necessary for this firm to build an addition to their factory at Des Moines.

The Main Belting Company, was there with bells on. Earl Hiller and E. F. Deckert greeted the visitors in room 304 and presented each with a handsome note book. They reported business exceptionally good in their line and expressed much satisfaction with the N. B. M. A. Convention.

The Fate-Root-Heath Company, Plymouth, Ohio, extended the glad hand in rooms 258-260. In the latter room they displayed catalogs and literature of their large line of claywork-

ing equipment, including special cutting tables for hollow tile, drain tile and brick, and seven and four-ton gasoline Plymouth locomotive. Representatives H. Votaw, Samuel Geijsbeck, J. F. Chambers, C. G. Stein and Ray Sykes declared that business was exceptionally good. A very acceptable match box cover was given as a souvenir.

Another concern, with busy live wire representatives, was that of E. M. Freese Company, Galion, Ohio, rooms 218-220-222. Here photos and literature of the Freese complete line were on display and splendid souvenirs, pocket bill holders and pencils were freely presented. Business is "great" according to their live wires, B. E. Place, E. L. and G. E. Hess, R. A. Whiston and H. H. Freese.

Well, if you didn't visit the headquarters of the International Clay Machinery Company, Dayton, Ohio, rooms 210-212, you are in a class by yourself, for seemingly every one was there securing one of their half-foot steel rules and naturally some information regarding products of this well known firm. Exhibited in room 210 was a dryer car bearing (a special design of flexible type with oil reservoir), and catalogs of their new line of one-piece base augur machine, pugmills, dry and wet pans and complete line of clayworking machinery. R. H. McElroy, E. J. Anderle, Geo. H. Paxton, G. W. Nushaw and Jos. D. Cite were the representatives.

W. A. Meddick, as usual, represented The Lakewood Engineering Company, Cleveland, Ohio. He enjoyed the week of convention work and wore the smile that wouldn't come off. Lakewood clay cars, electric transfers, clam shells and storage battery trucks are much in demand. Mr. Meddick was assisted by Lloyd Brown.

The Lancaster Iron Works had an unusual exhibit just outside the doors of rooms 206-208, also inside their rooms. This consisted of large black oil cloth banners on which printed in white were the scores of installations of their Auto Brik machines. Jim Martin, A. C. Scully, Chas. R. Tobin and F. T. Buzard extended the glad hand and presented the visitors with souvenirs, Lufkens steel tape measures. Plans and photos of complete plants, bulletins of different machines manufactured and a display advertisement from Architectural Record, as shown in this month's advertisement in *The Clay-Worker*, covered the walls. Both their Lancaster and New London factories are busy filling orders.

Ellis Lovejoy, Columbus, Ohio, one of the best known ceramic engineers in the business today, had a most pleasant week renewing old friendships and answering questions on plant problems whenever button-holed.

The Manufacturers' Equipment Company representatives, I. M. Justice, W. M. Sachs, J. L. Schroll and E. M. Mahlmeister were kept busy in rooms 250 and 251 with appointments of delegates interested in their Justice Radiated dryers and general line of equipment, including J. C. Steele & Sons Company's machinery with the No. 18 side cutter which is gaining much popularity. This company is the northern representative of the Steele Company.

Both H. O. and F. F. Steele of the J. C. Steele & Sons Company, Statesville, N. C., were on hand to enjoy the convention work, do missionary work and present the delegates with their compliments, a steel tape measure.

The R. D. Nuttal Company, Pittsburgh, had a live wire in J. E. Mullen, a familiar figure at recent national conventions. In room 204 he displayed samples of their cut tooth heat treated gears and pugmill knives, catalogs on general lines and gear design handbook. A souvenir match box was presented each delegate.

In a large sample room near the elevators on the second floor was a large display of "Ohio" rolled edge steel brick pallets, by the Ohio Galvanizing and Manufacturing Company, Niles, Ohio. A. J. Bentley and B. Taylor represented the company.

In this room was also a fine exhibit of Hummer Electric screening, Ro-Tap testing sieve shaker and wire cloth, by the W. S. Tyler Company, Cleveland, Ohio. F. P. Nickerson, G. A. Jakubs and Fred S. Curtis were the representatives.

Arthur O. Dupuy, inventor of the Dupuy automatic brick machine and Dupuy drier, represented the Pioneer Machine and Engineering Company, Cleveland, and explained the merits of the machine and dryer and took delegations out to the plants where these are being used with much satisfaction.

George Potts of A. & G. Potts Company, Indianapolis, manufacturers of soft mud machinery, stated that this was the most successful convention in point of orders and inquiries he ever attended.

Jacob Stocke, Jr., of the Progress Pressed Brick Company, St. Louis, had on display panels of rough texture brick made on dry press machines equipped with his patented device. These were beauties and demonstrated the worth of his mould and attachment.

Frank Robinson, Pittsburgh, a regular N. B. M. A. live wire, received many inquiries for his Pittsburgh Hot Air Dryer and dryer cars.

L. E. Rodgers, of Chicago, "the dryer man," known as such throughout the United States, because of his many installations, took things easy convention week and together with Mrs. L. E. had a royal good time.

The Atlas Car and Manufacturing Company, Cleveland, Ohio, was represented by Ralph S. Richards, who explained the merits of their cars and the Atlas Gasoline Locomotive.

The Standard Dry Kiln Company, Indianapolis, Ind., had a "sure nuf" live wire representative in Victor R. Jose, Jr. He booked orders and inquiries that made the week a happy one for him and his little "Book of Smiles" made everyone else happy.

Speaking of "Service," the Keynote to success (the Stevenson Company, Wellsville, Ohio) of dry and wet pans, crushers, sewer pipe and tile press, bucket elevators, feeders, etc., those royal good fellows, T. A. Hibben, Martin A. Abbott and E. W. Dow, delivered the goods. They have so much business they haven't room to kick.

The Minter system of burning was described and explained by their representative, H. Ewart, Albany, Ga. They have recently installed their system in the plants of Electric City Brick Company, Augusta, Ga., Excelsior Brick Company, Ga., and will soon install same in the plant of the Acme Brick Company, Cayuga, Ind.

Wm. Clerkin, an old time conventioner, represented the Taplin-Rice-Clerkin Company, Akron, Ohio. This firm has a high reputation for single and double acting presses, dry and wet pans, clay crushing rolls, gravity elevators, chaser mills, wad mills, clayworking dies of every kind and description, etc.

C. M. Ross had his hands full explaining the merits of the Wellington line, especially their automatic machinery. He expressed great satisfaction with the convention and declared The Wellington Machine Company came in for its full share of orders and inquiries.

The Welter Manufacturing Company, Chicago, was represented by W. H. Kent and John D. Kinsey. This firm manufactures a splendid line of conveying machinery, the coal handling equipment, a labor saving device, much in demand.

Geo. W. Mitman, of the C. K. Williams Company, Easton, Pa., is a familiar figure at N. B. M. A. conventions and naturally enjoyed button-holing the members. His company makes the Anchor Brand Colors for mortar and cement brick.

The Toronto Foundry and Machine Company, Toronto, Ohio, was represented by E. N. Francy, E. E. Hartford and A. H. Vaughan. In their room 304, they displayed photos of their dry and wet pans, elevators, conveyors, trucks (famous invisible trucks and barrows) and a complete line of sewer pipe machinery catalogs and bulletins. They featured their Type B, 10-ft. dry pan, shown in their ad on page 171, this issue.

The Scandinavia Belting Company had a good bunch of representatives in E. W. Kingsbury, A. K. Kinley, J. M. Hallissy and J. H. Reside.

Major Gates, the son of Button-Hole Gates, explained the merits of his stokers and puliscrome machine, representing the Clay Service Corporation of Chicago.

Other firms represented were They and Fairbanks Steam Shovel Companies, Galion Iron Works, Smokeless Oil Burner Company, Sanderson Cyclone Drill Company, American Dressler Tunnel Kiln Company, Frank D. Chase, Link Belt Company, Clark Trucktractor Company, Henry Webster & Sons, Erie Steam Shovel, Morse Chain Company and Westinghouse Electric and Manufacturing Company.

CANADIAN NATIONAL CLAY PRODUCTS' ASSOCIATION.

Annual Convention Held at Hamilton, Ont., January 23, 24 and 25, 1923.

A JOINT CONVENTION of the above association and the Western Clayworkers' Association of Canada, was held at the home of the president of the former, Ryland H. New, and was characterized by good fellowship, as are all the meetings of the clayworkers of Canada. Mr. New is a clever, generous host and made all visitors feel at home. In the glad hand work he was ably assisted by C. A. Miller of Mimico, Ont., a suburb of Toronto. "Charley" became a glad hand expert years ago at the annual meetings of the N. B. M. A. Formal acknowledgements of the courtesies extended by the local people, were made by W. H. Freeborn of Bramford, and Wm. McCreidie of Lyons.

The first paper of the convention was read by A. G. Daltzell on the subject, "How Building by Law May Reduce the National Fire Loss." He pointed out that the fire loss in Canada in 1921, not including forest fires, amounted to over \$40,000,000, equal to \$5.52 per capita, which is five times the per capita loss in European countries. In Glasgow, Scotland, which has about the same population as Toronto, there is annually a fire for every 5,100 of its population, while Toronto has a fire for every 82 of its population. He suggested that the fire loss might be reduced by zoning regulations, and by stricter laws requiring more fireproof construction, and by the prohibition of sham or imitation architecture.

Secretary Keith appreciates the fact that social intercourse encourages closer and more effective co-operation among the members, so for a number of years they have made a feature of their noon day luncheons, during which one or more speakers are introduced to discuss subjects of general interest. Tuesday noon, J. M. Pigott, chairman of the Hamilton branch of the Building and Construction Industries, spoke on "The Success of Co-operation." The burden of his talk was on the need of a scheme for more apprentices in the industries, and he advanced the idea that apprentice boys be employed at \$50 a month during their whole apprenticeship and that during the winter they be sent to technical schools and in the summer they be taught various trades and kept at work under conditions that will enable them to master whatever trade they chose to follow.

At the afternoon session, several interesting papers were read, dealing with plant management, fuel economy, cost accounting, etc. Wednesday forenoon, Prof. F. L. Ferguson, D. S. A., of the Ont. Agricultural College, Guelph, read a paper on the "Necessity of Tile Drainage in Crop Production," and Jas. P. Martin of the Lancaster (Pa.) Iron Works, read an interesting paper on "Making Soft Mud Brick," during which he described an improved automatic brick machine, the operation of which reduces the manual labor fifty per cent or more, which after considerable discussion was followed by a moving picture of brickmaking on the Hudson River by J. Preston Penfield, Bucyrus, Ohio.

At the noon day luncheon the meeting was addressed by Theodore A. Randall, Secretary of the National Brick Manufacturers' Association, also editor of The Clay-Worker, Indianapolis, and R. B. Morley of Toronto, who spoke as an official of the Industrial Accident Prevention Association. During the afternoon the delegates motored out to the plants of the Canadian Libbey-Owens Sheet Glass Co., Ltd., The Canadian Porcelain Co., Ltd., and the pottery of R. Campbell's Sons.

The Annual Banquet at the Royal Connaught Hotel

Wednesday evening was particularly enjoyable. There were several musical numbers, and a humorous stunt or two injected between the toasts. The guest of honor was Sir Henry Drayton, K. C., K. B. Wm. Drynan, a Rotarian of Hamilton, served as toastmaster. Chas A. Bowen of Detroit, Mich., spoke for the Common Brick Association of America and was listened to very attentively. The Rev. Dr. S. Banks Nelson made the hit of the evening, interlarding the serious thoughts with a series of appropriate humorous incidents that proved him to be a student of human nature, with a leaning toward the genial side of life. Theo. A. Randall was again called on and spoke briefly, as did President Ryland H. New and Fred B. McFarren.

Thursday morning session was given over to the consideration and discussion of mechanical devices, Frank R. McCannell telling of modern electric shovel with caterpillar tread. Thos. Hibben of the Stevenson Co., Wellsville, Ohio, discoursed on the clay crusher, and H. F. Dingleline spoke at length on the manufacture of hollow tile. The Thursday luncheon was out of the ordinary, an operator giving a demonstration of the Bell Telephone.

Election of Officers.

President, Ryland H. New, Hamilton, Ont.
First Vice-President, T. H. Graham, Inglewood, Ont.
Second Vice-President, Andrew Dobs, Mimico, Ont.
Third Vice-President, D. C. Merkley, Ottawa, Ont.
Secretary-Treasurer, Gordon C. Keith, Toronto.

Various committees were appointed to carry on technical investigations and other necessary work during the year.

A number of interesting exhibits of brick and tile were shown in the lobby approaching the convention hall, conspicuous among which were panels of rough texture brick, prepared for the occasion by J. Stocke, Jr., of the Progress Press Brick Co., of St. Louis, Mo. Mr. Stocke also displayed a model of a dry press machine with his patent attachment for making rough texture dry press brick.

Several of the machinery and kiln firms of the U. S. A., other than those previously mentioned, were ably represented: The Fate-Foot-Heath Co., Plymouth, Ohio, by J. H. Chambers; The Hadfield-Penfield Steel Co., Bucyrus, Ohio, by Lambert Haigh; the Brown Instrument Co., Philadelphia, by Robt. W. Mayer; Lancaster Iron Works, New London, Ohio, F. T. Buzard; E. M. Freese & Co., Galion, Ohio, R. A. Whiston.

The Clay-Worker is indebted to Secretary Keith for various favors, including much of the data given above.

NEW COMPANY INCORPORATED IN CALIFORNIA.

George R. Whitcomb advises us that the Western Clay Products Company has just been incorporated to manufacture hollow building tile, roofing, flooring and partition tile and brick, at Orange, Calif. The company is capitalized at \$150,000. Mr. Whitcomb's address is Box 47B, Route 2, Orange, Calif.

ILLINOIS MEETING IN MAY.

The Illinois Clay Products Manufacturers' Association, in conjunction with the Chicago section of the American Ceramic Society and the Indiana-Illinois division of the American Face Brick Manufacturers' Association convention, will be held in Chicago some time in May. The definite date and program will be given in a subsequent issue.

The building boom is still booming and it is furnishing an answer to the employment problem.



General View Plant No. 3, Simons Brick Co., Los Angeles, Showing Location of the Twelve Potts Soft Mud Brick Machines.

WITH LOS ANGELES BRICK MEN.

Clayworker Scribe Visits Largest Soft Mud Brick Plant in the World and Other Plants of Interest in Los Angeles.

LOS ANGELES was really our objective point on leaving home, but traveling by easy stages with stops at Seattle, Portland and San Francisco, it was six weeks after leaving home before we reached the beautiful "City of Angels," where we had anticipated the joy of wearing summer attire in what we term our winter season, but where instead we yearned for heavier clothing than we had with us. On the days the sun did shine, however, it was real golden sunshine. It may be we looked through golden spectacles, instead of the proverbial "rose-colored" ones, but the sun seemed more golden in Southern California than any where else. We reached Los Angeles late at night and when we looked out of the windows of the beautiful Ambassador Hotel early in the morning, it was on a world bathed in golden sunshine. Gardeners were planting pansies after the fashion of our gardeners at home in the early spring time.

But, alas, we had reached the land of flowers and sunshine and movie actors, in what we were told was the "worse season of the year," in California, the beginning of the rainy season. However, we had the pleasure of seeing California showers, and take it from one who was caught out in several, when it rains in Southern California, it does a good

job. After a few rains the hills (we would call them mountains in Indiana) the mountains began to take on a green tinge, so we minded the rain not one bit, and the cordial hospitable spirit shown by every one every where we went, radiated sunshine all the time.

The beauty and glory that belongs to Los Angeles had been told to us over and over again, but even so we were not prepared for such a big hustling, bustling metropolis. The history and growth of Los Angeles is too well known to bear repeating, think of a town increasing its population 75,000 in one year. It is no wonder the sidewalks in the business sections are barricaded for whole blocks where magnificent buildings, most of them of brick and terra cotta, are being erected, and the sound, not of the saw and hammer, but of the brick mason's trowel and the pneumatic hammers or riveting machines, is heard all day long.

On account of the proximity of Los Angeles to the earthquake zone, they do not rear skyscrapers of the Chicago and New York City type in Los Angeles, but the buildings are fine substantial structures, with brick and hollow tile for interior walls, and brick and terra cotta for the exterior, with burned clay roofing tile. We were disappointed to find so many cement and stucco homes, but they "take the curse off" by roofing them with burned clay tile. These roofing tiles are made in all colors of red and beautiful greens, which fit in with the scenery, and the clayworking soul is made to "rejoice



Aerograph Picture of Simons Brick Company's No. 3 Plant, at Los Angeles, the Largest Brick Plant in the World.



Loading Brick from Kiln onto Trucks for Delivery to Jobs. The Trucks are Nearly All Owned by Employees of the Company.

and be exceedingly glad" over this phase of the Los Angeles residences.

After being there a few days, it seemed a superfluous question to ask any brick man how business was. Seeing was believing, and it seemed to The Clay-Worker scribe that Los Angeles must be the brick man's paradise. Going across Third Street one day, a sign confronted us bearing the words "The Simons Brick Company," and it looked like an old friend. Going into the office we found the secretary of the company, Mr. Herbert Howeth, who gave us a very cordial invitation to take us out to the various plants of the Simons Brick Company the following day.

Where the Simons Brick Company Make Roofing Tile.

Fortunately for us, the following day was a beautiful sunshiny day which made picture taking possible. Our first stop was at the Boyle Avenue plant, where they were running mostly on roofing tile, specializing on Sorrento mission tile and a Spanish tile, large and small sizes, ranging in various shades of red which they get through the manipulation of the kiln fires.

The Boyle Avenue plant was established in 1898, and the clay there was exhausted sometime ago, so they are now shipping the clay over from Santa Monica. They also make hollow building tile at this plant and a common soft mud brick, which they style a "Ruffled" brick. All of the brick

and tile are dried in the open, and burned with gas. They have eight beehive kilns and four round down draft kilns.

They make 10,000 roofing tiles per day, 4,000 Mission and 6,000 Spanish tile. The former sells for \$20.00, and the latter for \$15.00 at the yard. They employ largely Mexican labor at this plant and have for about twenty years. Mr. William Smelser is yard superintendent.

Making Stiff Mud Brick.

Over at the Montebello plant, we found what had originally been intended for a paving brick plant, but the clay was not suited for making paving brick, and the company died a bornin', as it were. The plant was taken over by the Simons Brick Co., and has been a successful proposition every since, turning out a splendid stiff mud building brick. They have a fine deposit of clay twenty feet deep extending over thirteen acres. The clay is dug by a steam shovel and taken in cars to a Hadfield-Penfield dry pan, thence elevated to a screen, thence down to a Hadfield-Penfield pug mill, and to a Bonnot stiff mud machine with a Freese cutter with which they make both end cut and side cut brick. The brick are taken from the belt and stacked on pallets holding 500 each, which are lifted up by an electric truck and taken to the drying racks where they are dried in the open air. This, of course, means they must shut down when it rains, but be it understood it never rains in Southern California



With a capacity of 430,000 Brick Per Day, Showing Machine Sheds, Drying Racks, Kilns and Immense Clay Fields.

from March until November or December. There had been a heavy rain the day before our visit so all the drying racks were covered with tarpaulins and the superintendent, Frank Stuve, said they had not lost any brick at all. On this yard they had the old-fashioned scove kilns, holding 750,000 brick, modernized, however, to the extent of burning with gas. It takes about a week to dry the brick and four or five days to burn.

The plant has a capacity of 60,000 brick per day, and nearly all of the work is done by piece work. The men start to work early in the morning and when 60,000 brick are made, they "call it a day and quit." All the brick here, as well as at the other Simons plants, bear the imprint "Simons." All deliveries to the job are made by trucks.

The Largest Brick Plant in the World.

Then came the big event of the day, the visit to Plant No. 3, which is located at Simons, a little town named in honor of the Simons family and made up chiefly of employes of the company. This, they claim, is the largest brickmaking plant in the world, and we will not dispute the claim, for that is exactly the way it looked to us, and as they make 450,000



A Simons Trio—Lonnie Riggs, Shipping Clerk; Herbert R. Simons, Secretary; Mr. Malone, Plant Superintendent.

brick—count 'em, 450,000 brick per day, the reader will agree it is some plant.

The clay is dug by steam shovels and loaded onto clay cars, both end and side dump, which are hauled to the plant by Plymouth locomotives, made at Plymouth, Ohio, by the Fate-Root-Heath Company, of which the company has four 3½ tons and one 7 ton. It looked like an endless stream of cars on the track sort of like a Sunday excursion of clay cars.

None but soft mud brick are made at this plant on twelve Potts machines. That had a very "homey" sound to an Indianapolis scribe, for as nearly every clayworker in the country knows, Potts machines are made by C. & G. Potts & Company of Indianapolis, and George Potts is a familiar figure at every National Brick Manufacturers' Association convention. The machines are set in pairs in sheds which have the appearance of temporary structures, but it is all that is necessary in that moderate climate. Each machine has a daily capacity of 60,000, so they can readily increase the capacity of the plant any time they desire.

The brick go from the machines on pallets over an Anderson cable conveyor to the open air drying racks. To one ac-

customed to seeing regular brick dryers as a part of a brick plant, it looked as though there were miles and miles of racks, and we would like to have some statistical expert tell us how far these racks would reach if put together in one continuous line. We always swear by our little camera, but the views we got, can give only a slight idea of the area covered by these racks.

The bricks are burned with gas in scove kilns, but kilns of a size that the kiln builder of even a decade ago never visualized in his fondest dreams. They had just finished burning a kiln of 1,250,000 brick. This kiln had thirty-one arches, while ordinarily they only build kilns of twenty-one arches. Just to substantiate our statement that we had seen a kiln of this size, we took a snapshot, so anyone doubting our word, could count the arches for himself. Honestly I wanted to hang around a while to see how long it would

The Big 31 Arch Kiln, Containing 1,250,000 Brick.



Tile Roofed Office and General Store at Simons.

take them to dispose of this kiln. We found one kiln where seven trucks were backed up, being loaded at one time under the watchful eye of Lonnie Riggs, the shipping clerk.

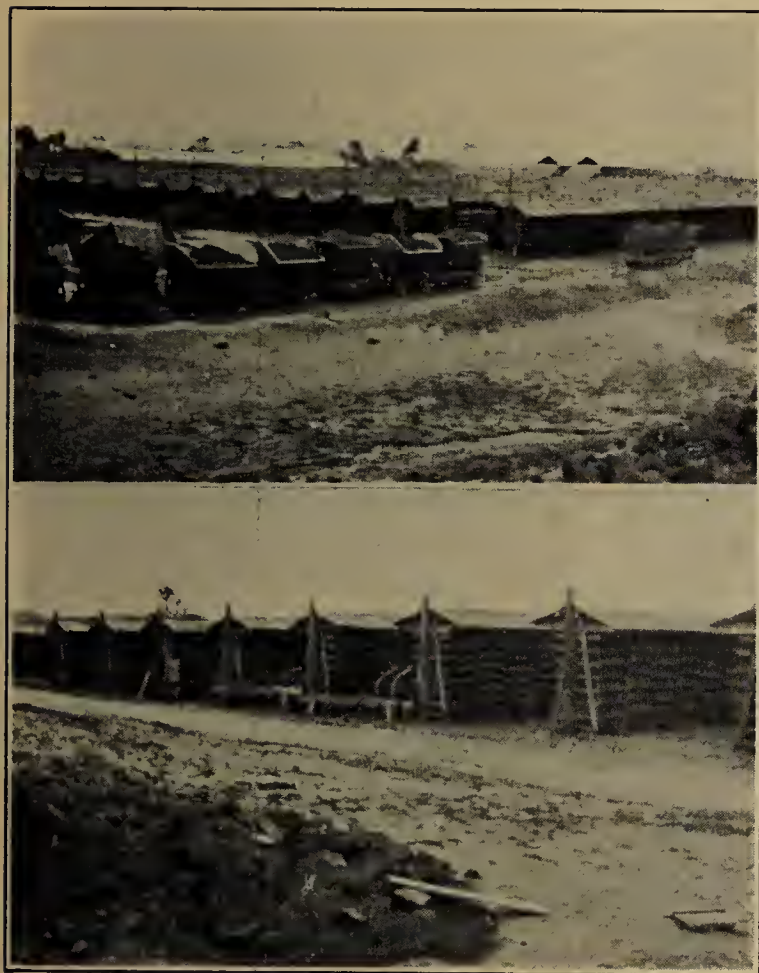
In this connection, the company finds it very satisfactory to hire the trucks, and nearly all of the big trucks which are used for delivering the brick to the job are owned by employes of the company. Labor troubles are at the minimum at Simons, for the company makes every effort to keep their employes contented and happy, which is surely good policy, for a contented workman does better work. The company has a large general store, where one may purchase anything from groceries to clothing and hardware. Mr. Malone, the plant superintendent, took great pride in showing the new Amusement Hall with movable benches, where they have picture shows twice a week, and weekly dances and en-

tertainments for their employes and families. A good baseball diamond is across the road from the company store and was in use during the noon hour the day of our visit. The company donated all the material and the employes built a quaint little church of the mission type of which the men are very proud.

The company has its own machine shop and blacksmith shop, and in fact everything essential to the up-keep of a modern plant. They employ all white labor, and as is the case in the other plants, mostly Mexicans. They have a nice five room schoolhouse at Simons, and of course the majority of the pupils come from the families of Simons' employes, and this is not to be wondered at for the Simons' employes and their families number something like 1,100 men, women and children.

We had only one regret in connection with the day, and

Cars of Clay on the Way to Machine Shed.



Partial View of the Out Door Drying Racks.

that was a big branch from the lovely pepper tree out by the Amusement Hall was left in the back of Mr. Howeth's automobile, and we never got any more. We had the misfortune to miss seeing Mr. Walter Simons, and hope for better luck another time. However, Mr. Howeth left nothing to be desired in so far as the personally conducted tour through the plant was concerned.

The Simons Company operates three other plants, one each in beautiful Pasadena, Santa Monica and El Centro. All in all, it is a wonderful organization, of which Walter R. Simons is president; R. P. Isitt, vice-president; John T. Crampton, treasurer, and Herbert B. Howeth, secretary.

Another pleasant day while in Los Angeles was the one spent at the plant of the Los Angeles Press Brick Company, and we hope to give an account of this in another issue in the very near future.

ADDIE M. WALLACE

SOME WAGE FIGURES.

THE NATIONAL INDUSTRIAL Conference Board, which has made a survey of wages today as compared with 1914, finds that the average hourly earnings of wage earners are 34 per cent higher now, while the weekly earnings are 25 per cent higher than in 1914. This means that the rate is 34 per cent higher on an average, and that the shorter day still enables the wage earner to get 25 per cent more than he did in 1914.

Now comes some other figures, too, from the associated employers of Indianapolis, in which we find the statement that in 1912 union bricklayers were paid \$6.00 a day, for which they laid a daily average of 3,000 brick. Today they are paid \$12.00 and lay 800 brick. This is an increase of 100 per cent in wages and a decrease of 75 per cent in the work performed. And where it used to cost one-fifth of a cent to lay a brick it now costs a cent and a half.

Putting these two sets of figures together reminds us that an average wage rate is one thing and a wage rate in any specific calling is something else. In the building indus-



Anderson Conveyor between Drying Racks, Simons Brick Company No. 3 Plant.

tries, the coal mines, the railroads, and to some extent in the metal industries, wage rates are so much higher than in some other industries that it is causing trouble and unrest. Investigations show, too, that the wage rate for bricklaying is a big factor in the cost of building brick homes.

The question is, what can we do about it? The clay-working industry is interested in seeing bricklayers prosper, and in seeing their numbers increase so that more brick building may be done, and when confronted with conditions of this kind it looks a bit discouraging. If bricklayers must have more high wages to encourage the youngsters to following the calling, and we are to encourage brick building in keeping, we must seek diligently to increase the quantity of brick it is practical for a man to lay up in the course of a day. Increased wages, to be logical and endurable, should carry with them increased production or output.

AMERICAN CERAMIC SOCIETY MIDSUMMER MEETING.

The next midsummer meeting of the American Ceramic Society will be held late in the summer and will include visits to plants in and about Detroit and a two-days' boat trip to Chicago, with stops for plant inspection at points of interest en route. The next annual meeting will be held in Atlantic City.

SILVER JUBILEE AMERICAN CERAMIC SOCIETY

THE SILVER JUBILEE CONVENTION of the American Ceramic Society was held February 12-16 in Pittsburgh, the city of its founding, but naturally under different conditions and surroundings. In 1898 nineteen ceramic enthusiasts meeting in the old Monongahela House founded the society with the sole aim of furthering their technical knowledge in the field of clayworking. This year over five hundred ceramists were drawn to Pittsburgh to celebrate the Twenty-fifth Anniversary of their Society which now totals nearly two thousand members devoted to the silicate industry embracing glass, lime, enameled cast iron, and refractories as well as the strictly clayworking lines, such as white-ware, terra cotta and heavy clay products. The old meeting ground would have been ample only for board meetings, for the William Penn and Fort Pitt Hotels, the leading hostleries of Pittsburgh, had more than enough guests during the week from this great industry to make S. R. O. mean sample rooms overcrowded.

It was a most successful convention, including a splendid banquet, smokerette, a complimentary play by students at the Carnegie Institute of Technology, three days of convention work and two days of side trips to points of interest in and about Pittsburgh.

Nine of the charter members were present and Col. Orton, the father of the society, presented one of the most interesting talks before the society at the general session and also performed admirably at the end of the banquet when he called upon all the charter members present to stand as their names were called (each receiving a round of applause) and told the 400 people present the early history of the organization. His reminiscence pointed out the condition under which they had labored and how their ideals had been developed.

He then installed the recently elected officers, namely: A. F. Greaves Walker, Pittsburgh, Pa., President; R. D. Landrum, Cleveland, Ohio, Vice-President; Ralph K. Hursh, Urbana, Ill., Treasurer; Ross C. Purdy, Columbus, Ohio, Secretary; and F. B. Ortman, B. Salisbury, F. K. Pence, F. H. Riddle and R. R. Danielson, Trustees. The ceremony was very impressive.

At the conclusion of this Col. Orton was presented with a splendidly bound book of letters from fifty of his former students, who in this fashion expressed their deep appreciation of Prof. Orton and the great privilege they had in presenting Rutgers College with a life-size portrait of him dressed in the costume he wore when receiving his Doctors Degree there last year.

The banquet was in honor of the founders and charter members, of whom nine were present, namely: Col. Orton, C. F. Binns, A. V. Bleininger, S. Geijsbeck, Ellis Lovejoy, W. D. Gates, Karl Langenbeck, Francis W. Walker and H. C. Mueller. W. D. Richardson and H. Ries arrived the next morning.

Alexander Silverman, chairman of the Pittsburgh District Section, gave the toast of Welcome and Pres. F. H. Riddle the Response. He also introduced the Toastmaster, L. E. Barringer. The set speakers were Walter Rosenhain on "Standards"; Dean Reavis, University Pittsburgh, "Pittsburgh"; Karl Langenbeck, "The Silver Jubilee," and W. D. Gates, "Charter Members."

Telegrams from Dr. Ries, W. D. Richardson, Stanley Burt, C. A. Bloomfield, also the English Ceramic Society and a cablegram from Werner H. Zimmer, a charter member now in Germany, were read.

The smokerette Tuesday night was attended by over 500. Vaudeville and dancing enlivened the occasion.

Wednesday evening the ceramists enjoyed a complimentary play given for them by the students at the Carnegie Institute of Technology.

A reception by the local entertainment committee was held after the general session Monday afternoon.

General Session.

Monday morning President Frank H. Riddle, Detroit, called the society to order and read his address, in which he reviewed the work of the organization. He stated he was glad to preside over this the closing of the twenty-five year period of the society and the end of the first year with a full time secretary. He declared that the most important piece of research work accomplished in the life of the society was the Role Played by Iron in the Burning of Clay Wares, by Prof. Orton, founder of the society and also the Ceramic Department Ohio State University, Columbus, O.

He pointed out the improvements now in progress in refractories, mentioned the fact that improvements were being made in the construction and operation of the continuous kiln and declared that every branch of the industry was making great strides. He detailed the growth of the Ceramic Journal, summarized the years' receipts and increase in membership and stated that while the expenditures were greater than the receipts in 1922 and that they had to draw upon their reserve fund, the 1923 receipts would be larger and more revenue would be secured from the advertisements in the Journal, also rental of exhibit space. The advertising is to be handled by the Columbus office and through solicitors.

He pointed out that there had been a gain of 20 percent in membership and that nearly 100 new members had been secured in the monthly period ending February 12th.

He eulogized full-time Secretary Ross C. Purdy, expressed great satisfaction with the team work in the Secretary's office and declared that while last year was an experimental year so far as expenditures were concerned that there would be a better opportunity this year and that the past expenditures should be a gauge for the maximum.

In speaking of future objectives he urged a new division, to be styled "Mechanical Developments," that each division be represented on the board of trustees, that the compilation of data to form a ceramic hand book should be undertaken, that the little work remaining in standardization should be completed, the work of preparing Text Book of the Art Division furthered, and that ceramic education should be divided into three classes of engineering, namely, first in trade schools, in semi-technical lines, where foremen and ceramists are to be trained as routine men, and the second and third classes, technical courses in which one set of men are trained to carry on research work and the other prepared to take up the work of executives.

Secretary Purdy read by title the various reports of committees, explaining briefly the main points in each report. In turn these were voted upon favorably with no dissenting voice.

The report of rules committee suggested that each division should nominate one from its membership for the board of trustees and that each member shall have but one major division.

The report of Board of Trustees approved the movement of the Research Council to raise \$200,000 over a three-year period by voluntary subscription for research work, recommended that ceramic students be allowed to join the society on payment of \$4.80 each year while in college, approved petition of students at Rutgers College, New Brunswick, N. J., for charter and recommended a budget for 1923 of \$40,000. To meet this figure 400 additional members and 100 corporation members will have to be secured as well as eleven additional pages of advertisements in the Journal.

The first formal address of the general session was by W. L. Clause, chairman of Board, Pittsburgh Plate Glass Co., who spoke on the "Economic Aspects of Our Industries."

He mentioned to what absurd length inflation had gone,

that it was obvious the German mark could never return to par, that there was a possibility of a revolution in Germany and that it was inevitable that the German mark must be gotten out of circulation before conditions could be stabilized. He pointed out ways and means for the accomplishment of the latter.

He declared that the French are building hopes on the reparation money, that the French had a perfect right to occupy the Ruhr, that there was never any real effort made to find out proper reparation figure, the present one being prohibitive, but that he couldn't give Germany any credit for an honest effort.

He stated that the United States and Great Britain must stand shoulder to shoulder for Europe is going to be dependent upon both for material assistance. He explained that we were in a wonderfully fortunate position, that we were self-sustaining and if thrown upon our own resources can have prosperity anyway, but that we did not want absolute isolation.

He declared that if the greatest business boom was just around the corner it could not arrive because of our lack of proper facilities for handling and taking care of same. He

equipped research laboratories were easy to install, but the securing of the proper personnel was the most difficult though most important task, for you need real men first, scientists afterwards, so that friction can be eliminated and harmony prevail between the technical department and shop.

Through continued and intensive research work better and cheaper methods can be determined, materials analyzed and substituted. He declared that when the executive can delegate to his staff problems that the research men and shop men can work out together in the proper spirit for the benefit of the entire business, then the master could devote his attention to the financial and marketing problems.

Prof. C. F. Binns followed with a paper on "The Art of Manufacture and the Manufacture of Art." He stated that no progress can be made in uplifting the industry unless the true conditions are realized, that foreign goods are superior, that we manufacture enormous quantities of tableware using open stock patterns and pay little attention to quality, and that we must prepare for that time when we will have to compete with foreign goods.

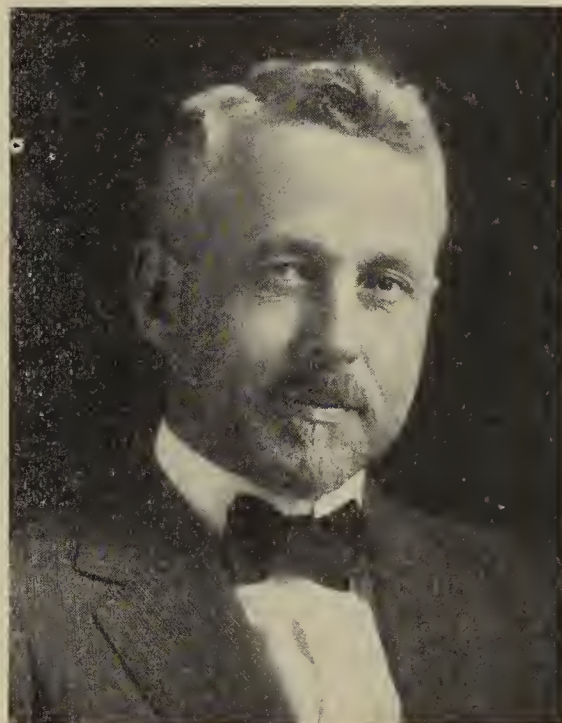
He declared that there is a conspicuous lack of individuality and our only salvation is to select best examples and set



A. F. Greaves-Walker, President-Elect,
Pittsburgh, Pa.



Frank H. Riddle, President,
Detroit, Mich.



Ross C. Purdy, Secretary,
Columbus, Ohio.

quoted Secretary Hoover as saying truly that the cost of the inadequacy of our railroad facilities was more than the expense to run our Government. The growth of railroad tonnage is two and one-half times greater than the rate of increase of population, and seventeen times greater than in 1890. There is no evidence of any decrease. The railroads cannot keep up with the demands and meet expenses for terminals, etc., necessary. The big solution he declared was improvement of our waterways, Mississippi and her tributaries and connection with Lake Michigan and the linking up of the Great Lakes with the sea through the St. Lawrence River and building of inland docks and ships to be used in this connection. He also urged the breaking down of the bars on immigration and stated that the country will be at a standstill unless some of these changes are made.

B. E. Salisbury, in his talk on "Research: Its Relation to a Manufacturing Executive," mentioned the fact that great changes had been made in the manufacturing industry during the last two decades and that the costly and bitter experiences of going it blind in years past due to lack of organized knowledge had changed business methods and that the master could not keep up with all branches of business and needed trained assistants.

The executive today must keep in touch with the business through department heads and carefully kept records. Well

them before our operators and instill that enthusiasm and desire that will make them strive to reach the high ideal.

Secretary Purdy made some announcements and then requested each charter member present to rise. Each received a hearty applause.

The afternoon session was called to order at 2 o'clock.

Col. Edward Orton, Jr., the first speaker, made a splendid address on "Engineering Education."

He pointed out that ceramic engineering was not different generally from other engineering, that all engineering education was based on the application of science for covering in an intensive way the needs of man and that the production of character, man's intellectual and emotional response to the truth, was the real foundation.

If education is the process of developing character, its component parts must of necessity be the cultivation of taste and reasoning faculties. The cultivation of taste should include good reading, study of history, art and music, the refining influences of life and while important should not be made the real foundation, for the more essential thing was the development of the reasoning power. Metaphysics, psychology and philosophy deal with the output of man's brain and are not based on the fixed output of nature. You can't prove anything or settle anything by philosophy, but this and

(Continued on page 172.)

REVIEW OF CONVENTION OF HOLLOW BUILDING TILE ASSOCIATION.

THE FIFTH ANNUAL MEETING of the Hollow Building Tile Association was held January 25th and 26th, Hotel Drake, Chicago, Ill. About sixty manufacturers were present, enjoyed the interesting program and bubbled over with enthusiasm sharing in the discussions covering a wide range of subjects.

The one great disappointment felt by all present was the absence of President "Jim" Howington, who was confined to his home by an attack of pneumonia. A telegram read at the last session gave the joyful news that he was much improved as well as his well wishes for a successful meeting.

William Hutton, Jr., of Troy, New York, opened the convention with a short talk eulogizing President Howington, and giving him credit for a large share in the splendid work that has been done in enlarging the membership of the organization.

H. C. Downer, of Malvern, Ohio, read his treasurer's report in which he detailed the net worth of the Association and reported the financial condition was very satisfactory.

Mr. Hutton, as chairman of the Finance Committee, in making his report, showed charts which pictured graphically where the money had been spent.

Secretary Sleeper's report detailed work of the Board of Directors after which each of five group representatives were introduced and responded to the request to tell what he had found to be the real need in his respective group. These men are all engineers in the field who call on the architects, contractors and others that will give them the pulse of the trade. In large projects these representatives do effective work through the individual owner as well as builders.

The morning session was adjourned after a report of the Membership Committee in which was shown the acquisition of 43 new members in the last eight weeks, making the membership representative of 75 per cent of the total tonnage of hollow tile in the United States.

A fine luncheon was served with the compliments of the Association in the Grill Room of the hotel and was repeated with an even better spread the succeeding day.

The second session opened with the General Report of Activities of the Traffic Committee by its chairman, F. R. Hale, Terre Haute, Ind. He detailed the freight rates fight, the adjustment and the appealing of the decision of rates before the Inter-State Commerce Commission.

W. M. Councill, chief traffic man of the National Fireproofing Company, Pittsburgh, gave a talk on what had been done to secure elimination of Kelly Combination Rule which allowed a doubling up of increase allowed by Inter-State Commerce Commission combination rates. The elimination means a saving of 40 cents per ton on all shipments of hollow tile or \$12 on a 30 ton car.

J. A. Dailey, of Chillicothe, Mo., gave a short talk on Claims for Overcharge, Loss and Damage, emphasizing particularly his method of following and collecting claims.

C. W. Dixon, Columbia, Ga., explained how the New Loading Rules should be applied. He stated that cars should be loaded with cells running horizontally lengthwise of car, the load being so distributed that it will be flush with sides with joints staggered if need be to take up voids and prevent sliding and ample boarding of doorways to give protection. This he declared would reduce to the minimum breakage and work of collective damages.

G. H. Galvin, Rockford, Ia., gave a talk on how he secured cars during the car shortage. This showed that it pays to keep after the railroads, and that the man that "hollers" the loudest seems to get the best service.

J. H. Payne, Dallas, Texas, made a report on the General Activities of the Advertising Committee, showed how much money had been spent and how it had been distributed. Over 90,000 pieces of literature had been distributed during the past year. In connection with this report an exhibit was shown attractively arranged on large cards hung on the walls of the convention hall which displayed the various Association pamphlets and individual firm circulars as well, used in a general publicity campaign.

The association has decided to concentrate its publicity efforts on a direct by mail campaign and has secured an expert in this particular to handle the work of preparing literature and giving it wide distribution. The plan service is also to be enlarged, more designs to be collected and a plan book issued sufficiently elaborate to give prospective uses of tile a wide range of both floor and exterior design for selection according to individual desire.

V. L. Yepsen, Woodbridge, N. J., sales manager for Annes & Potter Fire Clay Co., formerly sales manager for the National Fireproofing Company, gave a talk on what they did with their inquiries, in an analyses of advertising returns, told how advertising helped make sales, and declared it the only sensible means of educating the people who want to build.

C. W. Dixon explained how he followed up inquiries until he found out they were either dead or the man was dead.

R. G. Wallace, sales manager, National Fireproofing Co., Pittsburgh, told how he solicited the dealers' business.

J. J. Amos, of Humboldt, Kans., described how the Association was placing its plan service and how his own company was handling it individually with great benefit to their business.

The second session was adjourned after a prolonged discussion which embraced many subjects such as advertising, loading, traffic points, etc.

The third session was called to order at 11 o'clock Friday morning.

H. R. Straight, Adel, Iowa, chairman of the Standards Committee, made a report of its general activities. He showed that they were trying to eliminate light weight material which he considered a detriment to the business and at the suggestion of Secretary Hoover was trying to simplify sizes. His talk was preliminary to the introduction of various other gentlemen on the committee.

P. H. Bevier, New York City, read extracts from booklet just recently off the press of the Department of Commerce, styled Recommended Minimum Requirements for Small Dwelling Construction. The code recommended allows 8-inch brick wall 30 feet high or hollow tile 8-inch uppermost 20 feet of 30-foot wall. This book is to be distributed to the membership by the Association. It can be purchased, 15 cents the copy from Superintendent of Documents, Government Printing Office, Washington, D. C.

Mr. Downer, in talking on the subject, "Standard Weights Confirmed," stated that manufacturers should observe standard weights to be recommended by Standard Committee, that the tile should be sufficiently heavy to assure proper shipment and that more care should be taken in loading with bulk heads in each end of car and proper protection at doors and in other places to eliminate sliding of tile. His talk was illustrated by lantern slides which showed results on improper loading. His slogan, "Reduce price if you will, but don't reduce weight. Keep up to standard," seemed most acceptable to all present.

M. M. Morrow, Columbus, Ohio, made a talk on the subject of "The Simplification Program," giving recommendations in the connection with hope of wide discussion on simplifi-

cation of sizes. He cited what the paving brick manufacturers had done and declared that while no such sweeping simplification can be made in the tile industry many sizes could be eliminated to the best interest of all concerned. He urged that a questionnaire be sent out asking of the members the size they think can be discontinued.

One gentleman remarked that he had cut out the 6-cell and was boosting 9-cell partition tile up to and including 8-inch only, that he was calling 5-7-9's special, had cut out 10 and 12's and that there are many sizes that could be eliminated in partition tile but that it was more difficult to do so in load bearing tile. He recommended that certain sizes be made standard while others special with higher price on latter.

Mr. Hutton, in his talk on State and City Building Codes, eulogized State Architect Collier, of Albany, N. Y., declared politics in state buildings was being eliminated and urged the members to go after the Chamber of Commerce as the best instrument for putting through the proper code backed up by public sentiment through public meetings wherein the facts could be discussed in a broad open manner. He gave

ing over usual plant methods of burning. The group reports were all of an optimistic nature.

The election of officers was reported as follows: President, James T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.; Vice President, Wm. Hutton, Jr., Troy Fireproofing Co., Troy, N. Y.; Treasurer, H. C. Downer, Malvern Fire Clay Co., Malvern, Ohio; Secretary, J. C. Sleeper, Chicago, Ill.

OWN YOUR HOME EXPOSITION

A RECORD BREAKING year for home building is forecast for 1923 by William Zelosky, vice president in charge of the "Own Your Home" division of the Chicago Real Estate Board.

While statistics from all parts of the country show that residential building has established an unprecedented mark for 1922, indications are that this record will be exceeded in 1923.

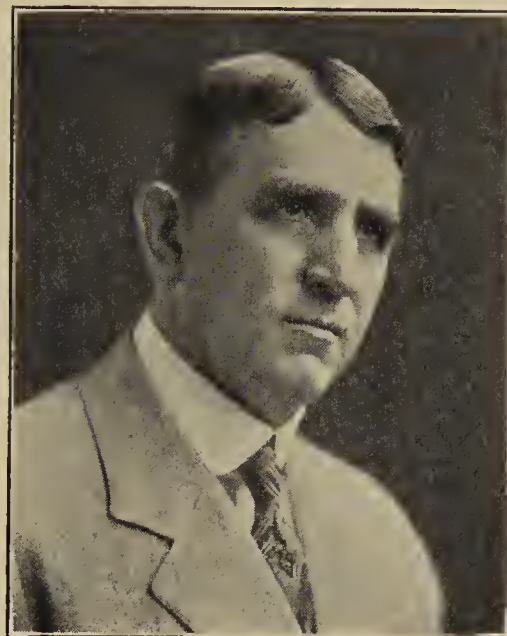
"The Own Your Home Movement which has been gathering momentum for the past five years is now in full swing,"



President James T. Howington,
Louisville, Ky.



Vice-President Wm. Hutton, Jr.,
Troy, N. Y.



H. C. Downer, Treasurer,
Malvern, Ohio.

as his opinion that no tile should have a shell of less than $\frac{7}{8}$ -inch thickness and that on 8-inch tile should weigh 34 pounds minimum.

The session was closed with an illustrated talk by H. R. Straight, Adel, Iowa, on Fire Resistance Studies at Bureau of Standards. He detailed work being done by the three men hired by the Association on tile furnished from 17 separate factories and districts of different make and material. The slides showed results of fire tests on surface clay tile, shale tile, clay and shale tile and fire clay tile. No surface clay or shale tile came through without some failure. The fire clay tile naturally stood best test. Of the mortars used the combination of 3 parts Portland Cement, 2 parts lime and 4 parts sand prove best.

The Friday afternoon and final session was devoted to a General Report of the Plant Operation Committee, by J. J. Amos, chairman, and reports of Conditions of Industry in each group.

The report by Mr. Amos was of the technical work carried on by the four Associations. He detailed the results of experimental work on nine plants all of which showed a great sav-

ing over usual plant methods of burning. The group reports were all of an optimistic nature.

"In Chicago, for instance, permits have been issued since January 1st, 1922, for erection of buildings housing 22,569 families. The number of individual homes is higher than for many years; but it will take several years of building, even at this rate, to remedy the shortage of homes that exists as a result of the cessation of building during the war."

Under direction of Mr. Zelosky, the Chicago Real Estate Board is preparing to stage Chicago's greatest "Own Your Home" Exposition and building show at the Coliseum, March 24th to 31st, 1923. This will be not merely a Chicago show, but will be presented in co-operation with Evanston, Oak Park, Harvey, the North Shore and DuPage County, through their respective real estate boards. More than 100 trade organizations and many civic bodies will also participate to further the "Own Your Home" Movement. Exhibitors, representing all branches of the building industry, are preparing educational exhibits to be displayed at the exposition.

BADGER CLAY WORKERS MEET IN ANNUAL CONVENTION.

THE Twenty-second Annual Meeting of the Wisconsin Clay Manufacturers' Association was held January 24-25, Republican House, Milwaukee, Wis. A representative group of clayworkers was present, and the two days were given over to lively discussions on many topics of interest to their craft.

President Ringle called the session to order Wednesday afternoon and gave an informal talk on convention work, dealing particularly with the Wisconsin freight rate problem.

Oil Burning for Brick Kilns was the title of a paper by P. W. Trimborn, of the Crude Oil Gas System Co., Milwaukee. He stated that liquid fuel oil was making great strides in all industries and was proving a great boon when used properly—that it is not a question of "Can I burn with fuel oil?" but "Can I burn more economically with this material?" He declared that a careful analysis would show that fuel oil is the most economical fuel possible. He showed wherein fuel oil was cheaper and better than coal as a fuel, making the point that the handling of the coal was almost as expensive as the coal itself, while fuel oil could be purchased cheaply, three to five cents per gallon, feeds itself, requires no labor at all, gives even and constant temperatures, and that its use was simply an engineering problem. He stated that an oil burning system could be installed for approximately \$5,000, and that it would pay for itself the first year. That the cost of steam would be about the same as fuel oil, one to one and one-half H.P. being required for pressure.

Robert Guhr, South Milwaukee, in leading the discussion, stated that Babson, in his last month's report, warned against any increase in cost of production, urged that labor costs be cut down, recommended a bonus system to get speed, and in this connection with these ideas in view he (Mr. Guhr) thought oil burning seemed one of the best ways of gaining these points.

A. O. Zerrenner stated that he had been seriously considering oil as a fuel for some time but had finally decided to adopt the Boss System of burning until such time as he could be convinced oil burning was a more economical method. He stated that he had been informed that on Detroit plants six cent oil was equivalent to \$9.00 coal.

A discussion on cost of installation was made by John Moroney, who has intimate knowledge in this connection, having installed many oil systems in recent years. He said that the best way to get at the fuel value of oil and coal was to figure the BTU in both and find the saving in handling, labor and shortening of the burn. A pumping, heating and regulating system is expensive—he advocated the gravity system, oil storage, the building of a cistern to hold two or three cars of oil. He stated that all that was necessary was a cistern, pressure tank, portable oil lines, steam lines and a piece of hose. He told how the Crookston (Minn.) plant is burning in sixty hours with larger per cent of hard brick, and described the Chicago Method of burning. The Illinois Brick Co. could not formerly burn their hard pan as well as their clay, with wood and coal, but their oil burning system is doing it very successfully, and that the cost of oil burning depends on the process, nature of the clay, etc.

There followed a lengthy discussion on the Boss System of Burning, in which Mr. N. L. Meir, of LaCross, told how the system worked on their plant. They burn 250,000 brick, 16 arches, using 15 H.P. engine and a Sturtevant fan, 550 lbs. of slack coal being required to the thousand brick. Two men fire the kiln. The brick dry faster when fan is making 500 revolutions per minute. The fan speed is reduced to 400

revolutions after the start. He also stated that the Groth plant at Winona, Minn., was having very fine success with the Boss System.

A. W. Hilker, of Racine, made a talk on the Relations of the Manufacturer and the Dealer. Each must have full confidence in the other and work together for their mutual benefit. The dealer finds a larger market than the manufacturer can find, stocks material and is more prompt in payment than the contractor, were the points made by Mr. Hilker.

After many different subjects were discussed informally, such as the bricklayer, the Mann Trowel, bricklaying schools, labor, etc., the convention adjourned for the day.

Thursday morning, upon opening the session, President Ringle distributed printed copies of the paper, "Burning Brick with the Aid of Pyrometers," by C. B. Thwing, Philadelphia, Pa. Mr. Thwing was not present, but had sent in a sufficient supply of the paper prepared for distribution.

"Our Great Need" was the title of a paper presented by J. E. Randall, of The Clay-Worker. This took up the various problems confronting the industry, such as freight rates, labor, fuel and the better knowledge of the business requirements, but stressed particularly the need of correct cost finding. This paper brought out considerable discussion along the line of proper factor of clay depletion and factors of depreciation. At the request of the officers of the Association this paper will be published in a subsequent issue.

"Railroad Rates in Wisconsin," by John Ringle, Wausau, Wausau, chairman of the Association Freight Rate Committee, reviewed the work in this connection.

The Resolution Committee made the following report:

WHEREAS, The Association is indebted to its officers and committees, the machinery firms, and persons on the program, first for their untiring efforts in our behalf, second for the valuable information in the discussions, and thirdly, for the papers read,

THEREFORE, Be it Resolved, That we do in this fashion, extend to all of them our deep sense of appreciation.

WHEREAS, It is the general belief, that the shortage of labor in our industry to some extent is due to the restrictions put upon immigration, and

WHEREAS, The pending legislation in Washington whereby the per cent of immigrants would be increased is of vital importance to us

THEREFORE, BE IT RESOLVED, That our representatives in Washington be informed of this Association's resolution, and in order to make this most effective that each member write personally to his Congressman, and Senators, setting forth the importance of proper legislation in this connection.

WHEREAS, The reduction in freight rates is of vital importance to the entire clay industry of Wisconsin, and, it is only just and proper that the Wisconsin manufacturers be given reasonable protection from outside materials, and since these facts have been laid before the authorities, by our Committee, and more than sufficient time has passed for a decision in this connection,

THEREFORE, Be it Resolved, That the members of this Association back up its committee in every way possible and follow such instructions as the committee may request, to facilitate matters. And whereas, the Association fully realizing the services rendered by our committees does in this place express the high appreciation felt for their work in our behalf.

WHEREAS, In years gone by we were favored with the active interest in our Associational work of two such well loved fellows as George Hartwell and L. H. Cordes, and

whereas, they have passed on into the life of eternal peace
THEREFORE, BE IT RESOLVED, That we in this manner express on the records of our Association our appreciation of their past services and friendships and our sorrow in the loss of them and that the Secretary be instructed to inform their families of this action taken.

OSCAR ZIMBAL,
 OMAR GASTON,
 J. E. RANDALL.

The following officers were elected for the ensuing year:

A. O. Zerrenner, New London, President.
 S. Gunther, Port Washington, Vice President.
 Oscar Zimbal, Sheboygan, Secretary.
 A. O. Wachter, Treasurer.

The newly elected President appointed the following committees;

Railroad Rates: John Ringle, Wausau; O. Zimbal, Sheboygan; A. O. Zerrenner, New London.

Publicity: A. W. Hilker, Racine; Erwin Friche, Manitowoc; Robert Guhr, Milwaukee; Oscar Gaston, Watertown.

ANNUAL MEETING METROPOLITAN PAVING BRICK CO.

O. W. Renkert was elected president of the Metropolitan Brick Company, Canton, Ohio, to succeed his brother, the late H. S. Renkert, at the annual organization meeting of the board of directors, February 7. Mr. Renkert will continue as general manager of the concern. Other officers elected were C. C. Blair, vice-president and sales manager; J. G. Barbour, secretary and treasurer; C. W. Keplinger, chairman of the board, and R. B. Keplinger, assistant general manager. The following board of directors was chosen at the annual meeting of the stockholders, which preceded the directors' meeting: O. W. Renkert, C. W. Keplinger, C. C. Blair, J. G. Barbour, J. J. Renkert, W. E. Keplinger, of Cincinnati; J. R. Rowland, of Youngstown; J. B. Imler, H. A. Butler, of Youngstown; R. B. Keplinger, F. R. Kanengeiser, of Youngstown, and D. J. Renkert. D. J. Renkert succeeds his father, H. S. Renkert, as a member of the board. In their annual report the officers of the concern reported a good year for 1922 and predicted an increasing business for 1923, it was announced.

REMARKABLE NEW DEPOSIT OF DIATOMACEOUS EARTH OPENED.

A new deposit of diatomaceous (infusorial) earth has been opened in Maryland on the Patuxent River, east of Washington, and is now being refined for market. The deposit is inexhaustible and geologists of the states of Maryland and the Government state it to be the best in the eastern United States. Tests conducted by the University of Ohio show that insulating brick made from this earth have greater insulating qualities than any other brick now being made. The Bureau of Standards of the U. S. is now using this new material in its work and is well pleased with it. The earth is pure white and free from foreign matter, and is being reduced to various degrees of fineness to suit the trade.

The mine and refining plant is owned by Mr. Benj. J. Dashiell, Consulting Engineer, Baltimore, Md. He is a man of wide experience in such matters and is the designer and builder of large kaolin plant near Leesburg, Florida; and other manufacturing and mining plants in the United States and South America. Because of its nearness to eastern markets and its superior quality, it was decided to undertake the refining of the earth. The plant offices of the Dashiell M. and R. Co., are at Dunkirk, Calvert Co., Maryland, with the Product Sales Co., of Baltimore; Md., as the sole agents.

SOUTHERN BRICK MEN HOLD MEETING.

THE ANNUAL meeting of the Southern Division of the American Face Brick Association was held at the Old Colony Club, Hotel Patten, Chattanooga, Thursday, January 25th, with a large representation of the Southern face brick manufacturers present. Business was reported as having been above the average for 1922, and some of the manufacturers stated they were doing the largest January business in their history. The officers were elected as follows: Chairman, A. B. Adams, of the Key-James Brick Company, Chattanooga, Tenn.; vice-chairman, C. A. Harker, Jr., of the Dixie Brick & Tile Company, Puryear, Tenn.; treasurer, our own John W. Sibley, of the Birmingham Clay Products Company, Birmingham, Ala.

The next meeting of this division will be held at Nashville.

NEW BRICK SALES COMPANY HEADED BY EXPERIENCED BRICK MAN.

THE BUCKLEY Brick Sales Company, of Des Moines, Iowa, is a new company which has recently been organized to handle the sales of the Capital Clay Company of Des Moines, and the Tri-City Brick Company, Carbon Cliff, Ill. Joseph L. Buckley is general manager of the new concern, and will divide his time between the Des Moines sales office and the plant of the Tri-City Brick Company, at Carbon Cliff, of which he is also general manager. At the last annual meeting of the Tri-City Brick Company, which was held the latter part of January, W. C. Grant, of Aledo, was elected secretary, succeeding Mr. Buckley. All of the other officers, including F. K. Rhoades, president; C. J. Mueller, vice-president, treasurer, and Mr. Buckley, general manager, were re-elected. The directors voted to increase their capital stock to \$100,000 to provide for a necessary expansion program. The Company turns out a high-grade building brick for which they have found a splendid market in Chicago, and northern Illinois and surrounding territory. The plant now has a capacity of 15,000,000 capacity.

DEATH CLAIMS M. F. WILLIAMS.

M. F. Williams, of St. Louis, Mo., who has been confined to his home for more than a year, died February 8th, at the Barnes Hospital. While he had been a sufferer for many years from diabetes, the immediate cause of his death was pneumonia. Mr. Williams was the inventor of the Williams' hammer crusher and pulverizer and for many years, together with Mrs. Williams, was a familiar figure at National Brick Manufacturers' conventions. He incorporated the company which bears his name in 1897, and the products of the firm are now sold in foreign countries as well as the United States.

He is survived by a widow, three sons and one daughter.

A PERMANENT INDUSTRIAL EXPOSITION.

UP AT NIAGARA FALLS they are planning to celebrate the tri-centennial of discovery and plans are being laid now to get busy at work which it is hoped will result in establishing a permanent international industrial exposition. In the preliminary announcement sent out by Russell Barr Williamson, Architect, Lafayette Bldg., Buffalo, a suggestion is made that the brick and hollow tile industries provide and support a building of their own with which to house and display clay products manufactured in all parts of the world. Further detail of plans will be made available soon, but meantime this announcement is being put forward that those in the industry may be giving the matter consideration.



Fire Flashing.

Fire flashing is a color effect produced by reducing kiln atmospheres, but more than this, the flashed face must be in contact with the moving gases, or in other words, in the path of the flame.

A buff burning clay in a reducing kiln atmosphere but not in flame contact will develop a grayish color usually speckled with iron yet when exposed to direct flame contact the result is a russet colored flash. The grayish color in the reducing atmosphere is due to the reduction of the iron to the ferrous state and its combination with silica in which the larger aggregates produce visible black spots of the iron silicate and similarly the disseminated and finely divided iron, but the specks are so minute that they are invisible and yet to them is due the grayish color, and the effect will fully permeate the mass if sufficient time is given for the reduction.

When the surface of the ware is exposed to flame contact the result is a russet colored flash and exclusively a surface effect.

Mr. H. B. Henderson in a paper before the American Ceramic Society has shown that the russet color is due to amber colored hexagonal crystals which owe their development to carbon,—likely graphitic carbon,—from the kiln gases, and probably in a nascent state from the cracking of the gases, especially methane.

The color of salt glazed ware and unglazed fire flashed ware is due to such crystals and analyses of several such glazes show a small content of carbon.

It is not believed that carbon enters largely into the construction of the crystals nor that the color is due to carbon, but instead it is the agent which starts the crystal and perhaps continues to influence its growth throughout the period of development. The color is thought to be due to iron either dissolved in the crystal or as a constituent of the crystal. The intensity of the color may be due to the solution of the iron.

A small content of iron in glass sand has no color effect on the sand but when the sand is fused into glass the color effect of the iron is very marked, and similarly the iron which gives a buff color to fire clay wares will be intensely deeper in a crystal glaze, or it may be that the color is largely due to light refraction. With this problem we are not concerned.

The analyses of the glazes do not justify the assumption that carbon is a major constituent of the crystals, and the only explanation is that it is the agent or principle directing the development of the crystals.

There are several phenomena in the production of flashed effects.

If a fire flashed buff burning brick is taken from the hot kiln in the final stages of the flashing process, it does not show the flashed color but instead has the grayish color of

a simple reduction. Mr. J. Parker B. Fiske in an early report of the American Ceramic Society shows the advancing depth in the flashed color of the bricks taken from the kiln at intervals during the cooling process. Time is essential to permit the growth of the crystals.

We have taken deeply flashed bricks and reburned them in the top of a continuous kiln where oxidizing conditions were a maximum and when the bricks were taken from the kiln, the flashed color had largely disappeared and instead we had the grayish color of a reduced surface. The explanation is that we have burned out the carbon and without its activity, the crystals cannot develop, but complete oxidation is difficult and there remains a trace of the flashed color.

One company in flashing fire clay products gets an unsatisfactory dark color, but not the desired russet color.

The operation in the factory is to finish the burning with clear fires and as strongly oxidizing condition as possible, and in this way the dark unsatisfactory color is overcome, leaving a light russet flash.

Fire clay products can be flashed at relatively low temperatures by starting the flashing treatment early in the burning operation and alternating with oxidizing conditions, but it is our observation that such flashes are lustreless and lack the life and brilliancy of the properly developed flash. Why we do not know. Our mental process runs to the theory that the true crystal flash is in some way due to graphitic carbon from cracked gases; that cracking, of methane particularly, occurs at higher temperatures; that soot developed in the furnace and at low temperatures and held mechanically in the gases may be absorbed by the ware but does not enter into crystal development. It may have the effect of darkening the surface of the ware but the true flash development is limited, or hindered, and its brilliancy is dimmed.

Smoke as we understand the term is not essential to the production of the flashed color. We have gotten an intense flash on a light buff burning ware with natural gas and throughout the burn there was no smoke in evidence.

The true flash comes only when the surface of the ware is exposed to the flame. If the ware is set in saggars, or muffle, however porous they may be, thus permitting the passage of kiln gases, we do not get the flash because the walls of the saggars or muffle collect the graphite.

A hole or crack in the muffle wall which permits tongues of flame to impinge on the surface of the ware will produce a flash wherever the flames touches. Bricks closely set end to end may have deeply flashed faces but the ends will not be flashed except shrinkage provides an opening, and if this opening is small, the flash will enter only a short distance and the remainder of the end of the brick will not be flashed.

As a rule,—invariably so far as we know,—we cannot get the deep golden flash on a stiff mud product such as we get on a dry pressed product which explains why the dry pressed

flashed product has held its market which in other color effects it has been largely displaced by the stiff mud product.

The deep flash is easily obtained on the salt glazed stiff mud product.

The quantity of absorbed carbon seems to influence the crystal development although it is not necessarily a constituent of the crystal. We have shown that we can reduce the depth of the flash by oxidation, and it follows that increased carbon content will deepen the flash.

If this be true we have an explanation of the difficulty in flashing a stiff mud product. Compared with the surface of the stiff mud product, that of the dry pressed product is very porous, and in consequence the surface exposure within a given area is much greater. Since the flash is a surface phenomenon any increase in the depth of the surface will give corresponding increase in the development of the flash. The viscous surface of the salt glazed ware will take up the carbon and continually present a fresh surface for further accumulation.

The intention of the above discussion is not so much an attempt to explain the cause of flashing concerning which there is little definite knowledge and much conjecture, but instead we wished to present the phenomena in so far as we know them in order that a better procedure may be developed in the production of these color effects.

The best flashed effects are produced at high temperatures,—cone 3 to cone 9, preferably the higher temperature. Reducing kiln atmospheres are commonly employed but in this respect we have a field worthy of investigation. Excessive reduction, and by that we mean an air supply far below the theoretical requirement for perfect combustion, may produce a darker color, but it is less brilliant than a lighter reduction. In fact one may produce the golden flash at high temperatures with an excess of air in the combustion gases. Flame contact with the surface of the ware is necessary. The slower the cooling, the deeper the color of the flash, due to the greater crystal development. Unsatisfactory color effects, due, perhaps, to excessive reduction, sometimes may be corrected by finishing the burning under so called oxidizing conditions.

Fire flashing, or more properly, reduction of red burning clays is a very different effect from the flash on fire clay products.

In the red burning clays the brown to gun metal color is throughout the mass and only more brilliant on the surface in consequence of more fusion or glazing effect. Whether there is any graphitic absorption and crystal development or not is not known but considering the behavior of fire clays at low temperatures, it is likely there is very little true flashing in red burning clays and any slight true flash is mantled by the deep brown to black color of the reduced iron in the clay mass and its combination with silica. In limey clays we get a green color which is as truly a flash as the brown and blacks in red burning clays. In the one the green color is due to the development of lime-iron-silicate and in the other the brown is due to iron-silicate.

In a red burning clay under reducing kiln conditions the red oxide of iron is reduced to the ferrous oxide which acts as a flux and combines with silica, likely also with alumina, to form a black iron silicate, or iron alumina silicate to which the dark color is due. If the reduction is slight the amount of black iron silicate developed suffices merely to darken the natural red color to a brown, becoming darker with increased reduction and finally attains the dark gun metal black in which the iron silicate predominates.

The fused matrix will take into combination or solution other minerals which give color effects other than the brown to gun metal black, and thus we may get the olive greens, saffrons, and purples. If the flashings is done quickly the re-

duction may not penetrate to the center of the mass of the ware and thus in bricks faced in the kiln, we get the dark edges and red centers.

The widest variation in color effects comes from clays that scum badly and irregularly. The olive greens are likely due to lime content in consequence of the reduction of the lime sulphate (scum) and combination of the lime with the iron silicate, just as a limey clay produces a green color when hard burned. Such a green color will be on the surface only, except the color comes from sufficient lime distribution throughout the clay mass to develop the lime-iron green.

The saffron colors we have attributed to sulphur effects in the water-smoking and in incomplete oxidation. We have noted the influence of sulphur in producing unusual colors and we believe that some of the peculiar color effects in reduced products may come from sulphur. One yard formerly getting a percentage of unusual colors including saffrons no longer produces them since the kiln bottoms, setting, and kiln drafts have been corrected to get better and quicker burns.

PIONEER TERRA COTTA MANUFACTURER TURNS BUSINESS OVER TO HIS EMPLOYEES.

GUSTAVE HOTTINGER, the founder of the Northwestern Terra Cotta Company, Chicago, Ill., recently created a sensation by turning his business over to thirty-six of his trusted employes, who he says have worked with him, not for him. They are officers of the company and heads of the various departments. Mr. Hottinger recently finished purchasing the interests of the heirs of his original partners, all of whom have been dead long since. This made him sole owner of all the stock and he began his preparations to do what he had planned to do when the right opportunity came. Mr. Hottinger came to this country, from Austria, in 1867, at the age of eighteen, and his first job was with the Chicago Pottery Company, and when that company failed, together with four other employes, he rented the place where he had been employed, and started the Northwestern Terra Cotta Company, which has been a factor in the building world, not only in Chicago, but throughout the country.

In the reorganization that has been effected 30,000 shares of 10-par common stock were created, 26,000 of which have been distributed to the thirty-six executives and department heads, of which his son Adolph is one, at \$5 a share. The balance of the shares is being held for distribution to future faithful workers.

The recipients of the gift are officials of the firm. Six of the officials who step into ownership of the company started as day laborers, others participating started at the bottom of the ladder, and by hard work and loyalty have become department heads and shop foremen.

Mr. Hottinger indulges in only two luxuries—a large automobile and a handsome fish-pole. The latter, he says, is to be his business partner now that the old corporate relationships have been dissolved.

A BRICK.

(Written for The Clay-Worker.)

They dug me up in Babylon,
Where fifty centuries I had slept,
Where, in that city of the dead,
The trees their silent watch had kept.
They laid me in a city wall—
High up where I could see afar
And hear the tumult all the day
Of factory, shop and speeding car.
A kind of lesson I may teach
Of deathless usefulness, I ween,
As here with comrades bright and new
I glow beneath the sky serene.

—(Thos. Taylor, Woodbine, N.Y.)

FIRST ANNUAL MEETING OF THE PACIFIC NORTH-WEST CLAYWORKERS' ASSOCIATION.

THE largest meeting of clayworkers in the Pacific Northwest met in the new ceramic laboratories of the University of Washington, Saturday, January 20, 1923, for an afternoon and evening session, when sixty-nine clayworkers were present.

The meeting was called by Professor Hewitt Wilson of the Department of Ceramic Engineering for the purpose of forming an organization of the clayworkers of the Pacific Northwest, and to develop co-operation between the Ceramic Department and the industries.

The following program was given:

Welcome Address—Milnor Roberts, Dean of the College of Mines.

Work of the Ceramic Department—Hewitt Wilson, Director of the Department of Ceramics.

Coals of Washington, Classification and Use for Producer Gas—Joseph Daniels, Professor of Mining and Metallurgy.

The Clay Products of the Pacific Northwest from an Architect's Viewpoint—C. F. Gould, Professor of Architecture, and Bebb and Gould, Architects.

Hollow Building Tile Construction—Fred T. Heath, Department of Ceramics.

Humidity Dryers—A. L. Bennett, Northern Clay Co., Auburn, Washington.

Some Problems of Steam-Pipe Dryers—Ernest F. Goodner, Washington Brick, Lime and Sewer Pipe Co., Spokane.

Following the program the delegates inspected the Ceramic Laboratory of the University.

The Banquet occurred at six o'clock in the Faculty Men's Clubhouse, with A. B. Fosseen, Washington Brick, Lime and Sewer Pipe Co., toastmaster.

The program included—

Relation of the University to the Ceramic Industry—Dr. Henry Suzzallo, President, University of Washington.

Co-operation of the Bureau of Mines with the Ceramic Industry—C. E. Williams, Superintendent, Northwest Experiment Station, U. S. Bureau of Mines.

The Ceramic Department and the Ceramic Industry—Hewitt Wilson, Director of the Department of Ceramics.

Organization of the Pacific Northwest Clayworkers' Association.

Moving pictures were shown on the manufacture of face brick, and the story of the bathtub. (Enamelled iron and porcelain.)

Although the University of Washington has been through a severe financial crisis, Dr. Suzzallo has felt that the ceramic industry was important enough to build a new ceramic laboratory, equip it, and to provide funds for its maintenance. The University is now in a position to give the clay industry valuable assistance.

The following officers were elected to develop the details for a permanent organization:

President, Paul S. MacMichael, Northern Clay Co., Auburn, Wash.; Secretary, Hewitt Wilson, Department of Ceramic Engineering, University of Washington. Advisory Committee: R. A. Swain, Denny-Renton Clay and Coal Co.; F. T. Houlaham, Builders' Brick Co., Seattle; A. B. Fosseen, Washington Brick, Lime and Sewer Pipe Co., Spokane.

INCREASING CAPACITY.

Additions and alterations to their plant which the Ricketson Mineral Paint Works, Milwaukee, are making will cost in the neighborhood of \$30,000.

Frederick C. Bogk, president of the company, says that the

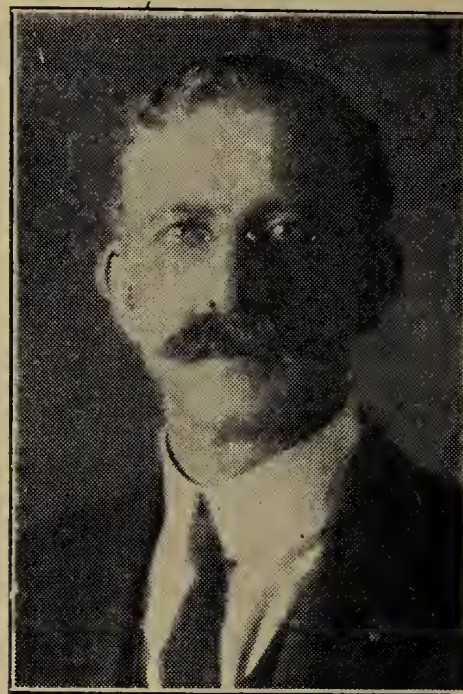
demand for the Ricketson colors has been growing so rapidly that it was impossible to fill many orders last season. "We want satisfied customers," he said, "and while we could always satisfy on quality we were forced to disappoint some of our best customers last year on deliveries." The storage capacity he says as well as the daily output will be largely increased and delayed shipments will be a thing of the past.

The Ricketson Mortar Colors have been on the market since 1885 and have won their reputation for their non-fading qualities.

R. T. STULL WITH CENTRAL OF GEORGIA RAILROAD COMPANY.

To Assist General Industrial Agent in Development of Mineral Resources on Central of Georgia.

RT. STULL, Chief Ceramist of the United States Bureau of Mines, has been granted a leave of absence by the government and has been appointed by the Central of Georgia Railway Company as its Assistant General Industrial



R. T. Stull, Savannah, Ga.

Agent, with headquarters in Savannah. Mr. Stull, who is one of the leading authorities in America on clays and ceramics, will devote his entire time to the development of the mineral resources of the Central of Georgia territory. He is already thoroughly informed as to what the South has along this line, and is enthusiastic over the possibilities of development. He has been in personal charge of the co-operative work carried on at the Columbus, Ohio, ceramic station of the Bureau of Mines for the past year and a half, by the government and the railway.

To the work of developing and standardizing the bauxitic and refractory clays of Georgia Mr. Stull takes a ripe experience both in science and industry. He was graduated from the Ohio State University with the degree of Engineer of Mines in Ceramics; has served as chemist, superintendent and ceramic engineer with some of the largest industries in the country, such as the American Terra Cotta and Ceramic Company, Chicago; Mt. Savage (Maryland) Enamel Brick Works; Steiger Terra Cotta and Pottery Company; Dunn Wire Cutting Brick Company, Conneaut, Ohio. He was with the Ceramic Engineering Department of the University of Illinois for eight

years and was acting director when he resigned. Under his administration the department grew from a small beginning to a registration of eighty-four students with equipment and buildings representing a quarter of a million dollars.

For more than five years he has been Chief Ceramist of the U. S. Bureau of Mines and Superintendent of the Bureau's Ceramic Station at Columbus, Ohio. During the war he was Chief of the Industrial Furnace Section of Ohio of the Fuel Administration. He is widely known as a contributor to the technical press and author of scientific articles. He has served as president of the American Ceramic Society; and is an honorary member of the chemical fraternity of Alpha Chi Sigma and holds membership in the honorary scientific society, Sigma XI.

The fact that the Bureau of Mines has consented to loan his services to the Central of Georgia Railway is a recognition of the importance of the work in developing clay resources, that the railway is now engaged in. The step in this work was a survey by the industrial department of the road, which ascertained that in Georgia's clay belt, which is 150 miles long and from 25 to 50 miles wide, there is enough clay to supply the needs of the nation for generations to come; clay that can be mined and marketed with the maximum of economy. The next step was a series of plant tests, and of research work at the Bureau of Mines' ceramic station, to determine the availability of the kaolins for fillers, pottery, porcelain, tile and sanitary ware; and of the bauxitic clays for fire brick to be used in furnace work in the industries. To complete the program the Central of Georgia has secured the services of Mr. Stull, who will place the advantages of Georgia clays before the manufacturers of the east and who will assist in solving the problems of mining, standardizing and marketing, in the producing territory.

He will assume his new duties on January 15, and those who desire to communicate with him may do so through J. M. Mallory, General Industrial Agent at Savannah.

IMPORTING BUILDING BRICK.

Once more we have talk of importing building brick to help relieve a situation. A Dow Service Bulletin on the building situation starts off with this: "European brick may be the pulmotor applied to the New York construction industry should it begin to show serious signs of suffocation for lack of a domestic supply."

Then we are told that two shiploads of brick are to embark from some European port, presumably Danzig, if New York's sources of supply should fail sufficiently to start prices skyrocketing.

Things of that kind have happened in both brick and lumber, not only in pioneer days when the producing industry was in its infancy here, but within the past two years. And such things can happen again, but they are not likely to be anything else than incidents which serve to illustrate our failure to maintain an equitable balance between supply and demand. They are good reminders of the need to stabilize our business better through statistical knowledge and co-operation, but they do not suggest any permanent competition from abroad.

It has been said in these columns that the brick industry does not need a protective tariff, that it is able to hold its own, supply the domestic needs, and spare some for export. There is no room to doubt the truth of this—that the brick-makers of this country can supply the needs, and at lower costs than they can be supplied from abroad. It is largely a question of knowing in advance what the needs will be, and that is one point we should be seeking more light on.

Written for THE CLAY-WORKER.

KENTUCKY BRICK NEWS.



THE BIG FEATURE of the past year and in the present outlook for building operations is the Louisville record and the projects under way. We did not get the permits for the new Brown Hotel and the Elks Club Building in the record for the year so as to round out the twenty million expected, but the total without these was sixteen and a half million dollars, which is more than double any previous year. In a word, 1922 was a boom year all around in Louisville building operations, and right now at the beginning of 1923 it is estimated that there are already fifteen million dollars in big projects being planned and started. So it promises to be a busy year both for the brick manufacturers of Louisville and for the dealers representing outside plants serving the trade here.

The early part of the year was not such a busy one for brick manufacturers, but along in the summer they got into action and the late summer and fall demand was very strenuous.

The Coral Ridge Clay Products Co., which makes both brick and hollow tile, has had a strenuous year, especially in the latter half. They did not have to close down for lack of coal, but they did have to do some hustling to supply their needs during the strenuous days of fall. They have had interesting development in the hollow tile trade this year, as well as a good business in brick.

The other manufacturing plant here is that of the Progress Brick Co., and the Poplar Level Road, which has also had a goodly year and reports good business for 1922 and bright prospects for the present year.

The R. B. Tyler Co., report a good year and active times right through the winter, with promise of bigger doings than ever during 1923.

It is pretty much the same story with William E. Whaley, in the Todd Bldg., who is one of the most aggressive brick salesmen we have in Louisville.

Among the newer agency activities here are the L. J. Bolster Co., and the R. C. Tway Co., Leo M. Parsons being the active man in charge of the building material end of the latter firm.

The brick plants out in the state have not not had so strenuous a demand as those serving the Louisville trade, but it has been on the whole a good year, and the best of it is that the agricultural districts and the towns serving and depending upon them are in better shape financially now, and this gives promise of better trade conditions during the new year.

The date has not yet been set for the annual gathering of the members of the Kentucky Clay Products Association, but suggestions which have come out of official conferences so far indicate that it will be held later in the season, very likely some time in March, after the big annual conventions are all over with and the spring season has advanced far enough to get a better idea of the actual building situation and trade prospects of the year.

COLONEL.

BULLSEYE STEAM SHOVELS.

The Bucyrus Co., of South Milwaukee, Wis., issues a special pamphlet publication illustrating and describing their 20-B Bullseye Steam Shovel, which they describe as the most up-to-date three-quarter-yard general utility machine on the market. It is a caterpillar-mounted rig and it is well illustrated and described in the catalogue publication.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

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OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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ADVERTISING RATES

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

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CURRENT COMMENT.

Are you all ready and tuned up for busy times?

* * *

The Big Week, like Christmas, has come and gone.

* * *

Every year, in every way, the N. B. M. A. convention gets better and better.

* * *

Reducing fuel waste will continue through the year as a sort of favorite brick yard game.

* * *

Getting into business these days is a whole lot easier than getting a steady profit out of the business once you do get into it.

* * *

Those who didn't go to the big doings missed something, but they can now do the next best thing, and that is read all about it in The Clay-Worker.

* * *

There is a fine showing of school building plans for this year. Now let us turn to and see that all these new school buildings have their walls of brick and hollow building tile.

* * *

Those who have kept going through the winter, and those who get busy early in the spring, promise to profit most this year, for the building boom has carried on right through the winter.

* * *

The high cost of building, which is being made an excuse for using more lumber, should make a good argument in favor of better and more permanent building, and the use of more brick and hollow building tile.

On the theory that it is darkest just before dawn we may soon expect brighter days in the old world, both politically and financially.

* * *

The Germans may think the French invasion a crime, but so long as memory serves us, not many people of other nations will think so.

* * *

The standard building code is helping some, but the big job right now is that of selling the home building public on the idea of better buildings.

* * *

In the drive for better out buildings on the farm, clay products should not only gain a larger place in wall construction, but should also enter largely into the work of flooring.

* * *

It looks like the coal operators and the miners have agreed that the public may go right ahead paying high prices for coal so that the miners may have high wages and the operators still get a profit.

CONVENTION ECHOES.

Differences of opinion which should lead to enlightenment too often lead to contention and stubbornness. Members of the two National Brick Associations should note the fact and cultivate the spirit of tolerance.

There is some question as to what may happen the latter part of this year and for that reason the first half is a good time for the brick people to make hay. The activities on the second and third floors of the Hotel Winton convention week gave proof that the progressive members of the N. B. M. A. are awake to their opportunities.

Maybe one reason why bootlegging jokes have been barred from the stage is that this industry has reached the point where it is no longer a joke. The hilarious ones at Cleveland offered confirmation several times confirmed. The local leaders who were in it have nothing to be proud of and executives of the N. B. M. A. are reconciled to the fact that there were no local entertainment committees on its program.

CONSTRUCTION FIGURES.

Figures compiled by the American Contractor show that during the calendar year 1922, 194 cities in the United States did construction work to the value of \$2,041,748,483. This is perhaps the basis of the estimate that the total construction in the country for the year ran above four billion dollars, and this, too, would be a conservative estimate from the figures made available by these larger cities.

There are several interesting things about the report. One is that it is just about three times any pre-war record in total, and the other is that it included an unprecedented percentage of homes. Homes and apartment houses were among the big features of the year and apparently we have only gotten a good start on this work and the present year will see another era of remarkable progress in home building.

Another feature of the year was in that instead of letting up with the approach of winter, building operations have continued right through the winter, the month of December showing more permits than November, and also a heavy movement of building material.

The feverish rush for home building, together with the high prices, resulted in an extensive use of lumber where brick and

hollow tile should have entered and the lesson we should get from this is to more aggressively push permanent building material during the present year. There are not enough houses of today that have their walls of brick and hollow tile, and it will be good for the building public as well as the clayworking industry if you can awaken a keener interest in this matter that will lead during the year to a more extensive turning to burned clay products for home building as well as for the more pretentious structures.

MIDWINTER DOINGS.

Never in the history of the country has there been as much in the way of building going on as has been the case this winter. In some of the larger cities there has been effort heretofore to carry on through the winter, but this year in almost every city of the country there has been as much new building starting right in midwinter as is usually the case with the spring. The upshot of it is that more building material has moved to the market and to the jobs during the winter months than ever before. Naturally under such conditions those who had good stocks of brick and hollow tile on hand, and those who have been able to keep running through the winter season have profited. And it looks like busy times right along—not when spring opens, but now. There is some apprehension that a reaction and let-up may come later in the year—a repetition of 1920, and in this we may read a caution to keep stock sold and moving instead of accumulating. And, whatever may happen later, the outstanding fact at present is that there has been more building right through the winter than was ever dreamed of a few years ago.

BUILDING CODE REPORT.

A report of investigation and recommendation by the Building Code Committee organized by Secretary Hoover to investigate building practices especially in relation to the construction of small dwellings is now ready in printed form and may be had at the nominal cost of 15 cents each from the Superintendent of Documents, Government Printing Office, Washington, D. C.

The report is well worth the cost, too, because it goes into some interesting details of one and two family houses with different types of exterior walls including brick, hollow tile, concrete, frame and frame including veneer and stucco surfaces. Among the recommendations are the following:

"The committee recommends that building codes permit 8-inch solid brick and 6-inch solid concrete walls for 2½ and 3-story dwellings, accommodating not more than two families each; that 8-inch hollow building tile, hollow concrete block, or hollow walls of brick (all rowlok), shall not exceed 20 feet in height to the gable and that frame construction be limited to 2½ stories. Metal lath and plaster on wood studs properly fire-stopped is approved for party and division walls, but at least every alternate wall in row houses must be 8-inch solid brick or concrete, or 12-inch hollow building tile, concrete block, or hollow wall of brick."

Requirements for quality of hollow masonry units agree fairly well with present practice, but those for brick are somewhat below the medium grade established by the American Society for Testing Materials. The report recommends revised working stresses for timber used in dwellings, based on investigations of the U. S. Forest Products Laboratory. Live loads to be required as bases for design are 40 pounds per square foot for floors of wood, and 30 for those of monolithic type, or of solid or ribbed slabs. Foundation walls of brick are required to be 12 inches thick for excavated enclosures,

and similar concrete walls shall be as thick as the walls they support, but not less than 8 inches. Special hollow building tile 12 inches thick is permitted for foundation walls of frame buildings.

DEALERS AND CLAY PRODUCTS.

From listening in at talks and reports from the many retail lumber conventions held this winter one gets the impression that the average retail lumber dealer does not look as kindly as he might on the matter of handling clay products. One man who says cement is one of his good paying items says he handles clay products only because it is necessary to supply his trade, and not from personal inclination and preference.

Plainly there is something wrong here that needs attention. It is only a few years back that many dealers shied at the item of cement, and even today some dealers specializing in clay products lack enthusiasm about cement. But the lumber dealers have learned to like cement. Probably the activities of the Portland Cement Association, and the individual manufacturers, has helped some to bring this change of sentiment about. There is more than a hint in that.

Clay products should not only be a big item in dealers' stocks in the near future, but it is the duty of the clayworkers to get busy at developing more interest right now, for interest and desire are great factors in pushing business. Let us look into this matter, see what is wrong, and what may be done in the way of mission work to make retailers everywhere like and push clay products items.

WHEN TO QUIT AND DIVIDE.

Secretary of Labor James J. Davis is credited with saying that the time to quit work and divide the wealth of the world is just two weeks before the end of the world. The reason here given for this is that the world's surplus of supplies is just two weeks ahead of starvation. It means that with all our seeming affluence and productivity we have not made and are not making any provision in the way of reserve which will permit all of us to quit work, divide and ride easy for any long period of time. From what he says it would hardly be practical to have a year of jubilee these days in which nobody would do anything but eat, drink and be merry and all would divide equally and make a new start for another 50-year period. There probably was something in that old basic idea of Biblical days of a year of jubilee when there was a balance striking and wiping of the slate clean and a fresh start with as near as practical an equal opportunity for everybody. We may need now and then a sort of jubilee occasion for wiping out the slate and making some more equitable distribution of the products of the world, but from the evidence before us there is no chance for us to all quit work and continue to thrive and do well.

SALE AND DISTRIBUTION COST.

While the cost of selling and distributing brick and other clay products has never been high in comparison with some other products it does constitute an item meriting attention from both sides. One is to see whether or not enough time and money is being put into the sales end of the business, and the other is to get at ways and means for efficiency in both selling and distributing.

There are some lines of industry where the sales and distribution cost amount to almost half what the final consumer pays. This is more often true when it is a product

which goes through the hands of the jobber, from the jobber to the retailer and thence to the final consumer. In the clayworking industry more sales are made direct, and where they are not direct to customers they are direct to some dealer in the community, so that the line of sales is not long or complicated, and it is doubtful if the sales cost itself is much of a factor in the total cost of clay products. In the matter of distribution it is something else especially if it is over long distance. Here we may well put in some thoughtful study as to how we can reduce some of the waste of distribution cost by serving each community with products nearby when they will fit in with the needs.

Aside from production cost the big items of cost in consumption of clay products are found in the handling and the laying at the building itself. These are items that are at present some handicap to the progress of brick building and they need attention. Meantime, however, if we can by a study of sales and distribution cost develop more efficiency it will increase the chances for better profit in the clayworking business while at the same time it will help insure fair prices to the final consumer.

CHEER UP DAY FOR IOWA CLAYWORKERS.

A ONE DAY CONVENTION of clayworkers was held at Des Moines, Iowa, February 15th. Secretary C. B. Platt announced it as Cheer Up Day for the brick and tile men of that section. He further declared that it was no place for a grouch, on the contrary the present business outlook is so good that every clayworker should be an optimist.

The attendance was small, less than fifty of the faithful answering when the roll was called, but they swapped trade information generously and resolved unanimously that it is well for clayworkers to get together and compare notes at least once a year. The meeting was honored by the presence of Senator C. A. Rawson, an old-time member. Secretary C. B. Platt declined a renomination and was tendered a vote of thanks for services rendered in years gone by. He was succeeded by M. T. Straight of Adel.

THE CONVENTION SPIRIT.

You have a dollar.
I have a dollar.
We swap.
Now You have my dollar.
And I have yours.
We are no better off.
You have an idea.
I have an idea.
We swap.
Now you have two ideas.
And I have two ideas.
That's the difference.

AND STILL THEY WAIT.

"My grand-dad notes the world's worn cogs and says
"We're goin' to the dogs;
"His grand-dad, in his house of logs
"Thought we were going to the dogs;
"His dad, amid the Flemish bogs
"Knew we were going to the dogs;
"The cave man, in his queer togs
"Swore we were going to the dogs;
"But this is what I would like to state—
"Those dogs have had an awful wait."

R. O. Clark, No. 8 on the roster, with his family, was among the early arrivals. Mr. and Mrs. Clark have been familiar figures at many conventions and this year were accompanied by their son, H. R. Clark, who is manager of the C. P. Merwin Brick Company, East Berlin, Conn.

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THE PORT OF GALVESTON.

The Commercial Association of Galveston, Texas, has issued a very elaborate publication on the port of Galveston in which is pictured and reviewed the history and importance of this port in our commerce. They give figures to show that Galveston has become the greatest wheat port in the country as well as the greatest cotton port, and there is a lot of interesting and descriptive matter of the terminal facilities in the course of which we are pleased to note that they have been using some good brick, including Brick for paving and pier flooring. It is an interesting publication with a classified business directory that should be of value to those interested in trade in that part of the country.

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

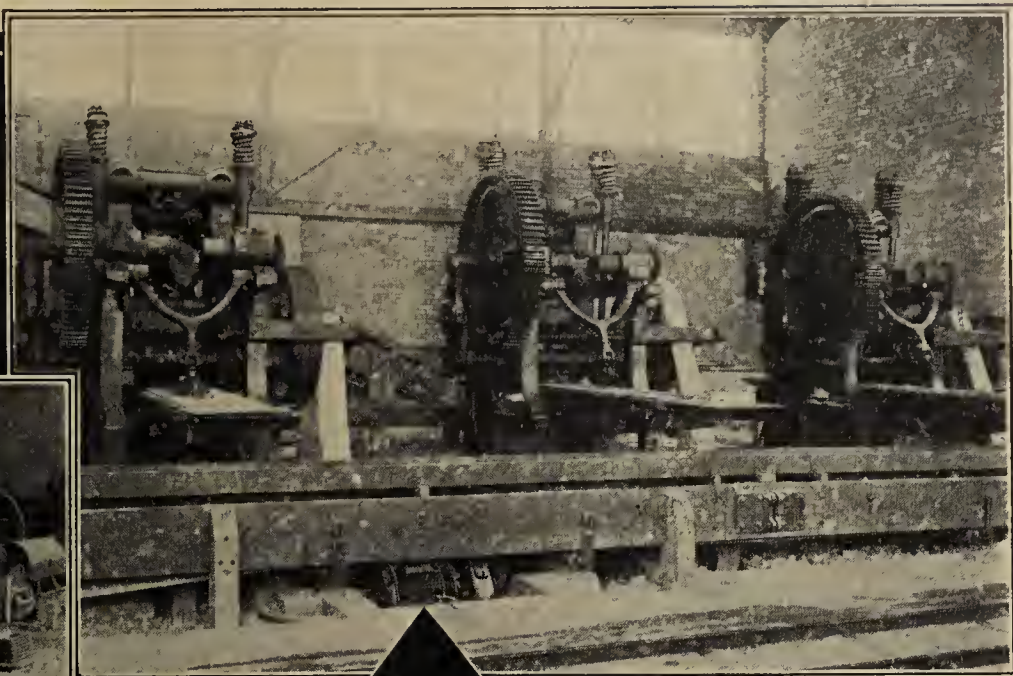
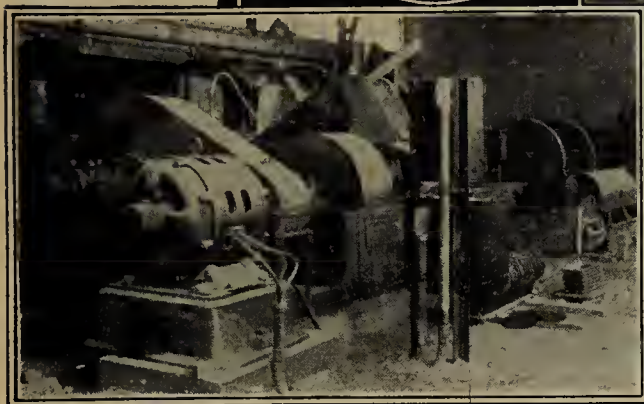
Pittsburgh Office
544 Union Arcade.

Hazleton, Pa., Office
705 Markle Bank Bldg.

75 h. p. Westinghouse Type CS Motor on International Clay Machinery Company's Type 425 Auger. Gloninger Brick Co., Vanport, Pa.

W

WESTINGHOUSE
ELECTRIC



10 h. p. Westinghouse Type CS Motor driving three brick re-presses. Gloninger Brick Co., Vanport, Pa.

—No Power Losses When Motor Driven

- No Standby Losses.
- Fewer Shutdowns.
- Low Maintenance.

Dust does not injure Westinghouse motors because they are adequately protected. Their rugged construction admirably fits them for the hard work they will be called upon to do in your plant.

Many who have installed Westinghouse motor drive have been pleased with the saving in power, the higher efficiencies and the greater reliability they assure.

Ask our nearest district office for full information.

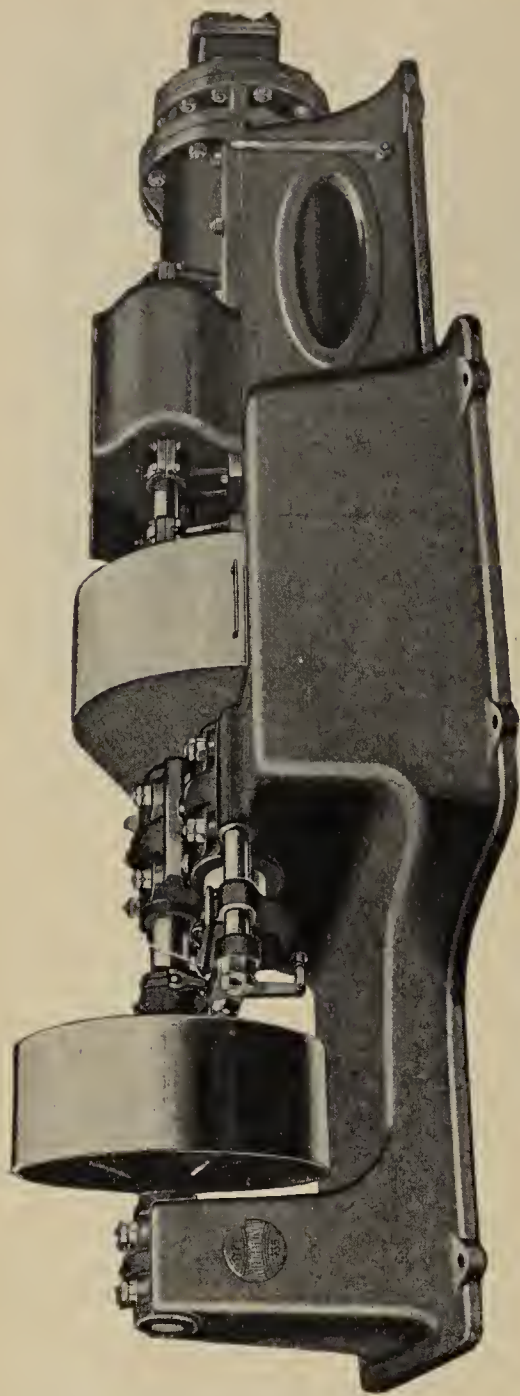
Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Westinghouse

Mention THE CLAY-WORKER.

WHY

A ONE-PIECE BASE?



Left—Base Casting.

Right—Bottom View
of Base Casting.



STRENGTH

It is obvious that a single casting, especially if it be of the box frame construction, is far stronger than a number of castings bolted to skids. Strength is of vast importance in auger machines which are called upon to force as high as 200 tons or more per day of tough clay through comparatively small orifices.

RIGIDITY

An absolute alignment of every part in its relation to the whole machine under all loads. The one piece base with no overhanging mechanism permits of no flexing or weaving of any part. Every bit of power that goes into a machine is passed through the pulley and driving shaft. Both ends of this shaft should be firmly anchored with no possibility of weaving. This can only be obtained by making the outboard bearing an integral part of the main frame, as in the one-piece base machine.

gears running in oil, positive lubrication of bearings and general design of shafts and bearings eliminate vibration and noisy operation. *A pencil standing on end on the die box has retained its position while one of these machines was turning out fire brick at a rate of seven thousand an hour. Have you ever seen this done on any other type of machine?* Elimination of vibration means longer life, fewer repairs and less power. Automotive Engineers have been devoting years of study and fortunes in money to decrease vibration in engines. Vibration is just as destructive in your auger machine as in your automobile.

LOW POWER COSTS

All gears have machined teeth and run in a bath of oil. All bearings are either ring or chain oiled. All shafts are extra heavy and bearings extra long, lined with high-grade babbit. All bearings are machined at one setting of the frame so that they must be in perfect alignment.

The bearings at no time can bind as there is no possibility of their being thrown out of alignment. It should follow that these new International Auger Machines are power savers, and that they are, is amply proven by statements of owners.

Send for your free copy of catalogue showing complete Machinery Equipment, Dryers and Kilns.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Pittsburgh, Pa.

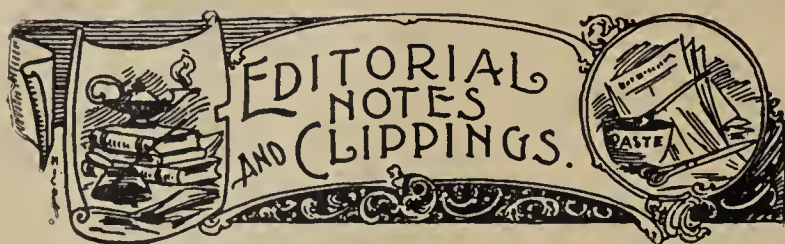
New York

Toronto, Ont., Can.

ENGINEERS
and
DESIGNERS
of
COMPLETE
CLAYWORKING
PLANTS

International

EQUIPMENT
for
MANUFACTURING
CLAY PRODUCTS,
POTTERY,
GENERAL WARE



The Cherokee Brick Company will erect a plant at Knoxville, Tenn., of 40,000 daily capacity.

The Lake View Brick Co., Chicago, Ill., has recently purchased a site at Irving Park Boulevard and California, on which they will erect a brick plant.

A new plant for the Ehrgott Brick and Tile Works, West Greenwich street, is now under construction on the west side, will have a capacity of 50,000 bricks daily.

The Pennsylvania Brick & Tile Co., Inc., of Philadelphia, Pa., has been incorporated with \$50,000. H. P. Marr, of Kennett Square, Pa., is at the head of the corporation.

Andalusia Brick Co., River Falls, Ala., which recently passed into new hands, is planning for a number of extensions and improvements. C. L. Benson, of Andalusia, is at the head of the new company.

The Holyoke Brick Co., of Holyoke, Mass., has been incorporated with \$100,000 capital stock by Patrick J. Kennedy, Jr., Henry H. Persons and William C. Mullen. The company will manufacture brick and other clay products.

The Saco Brick Co., for years engaged in the manufacture of brick at Saco, Me., has abandoned the brick business and will hereafter devote all its attention to the sale of clay products, used in building projects. Lewis B. Stillman is at the head of the company.

John Noll, Bethel, Mo., who has been in the brick contracting business for many years, died at his home in Bethel after an illness of several weeks' duration. He is survived by three sons, Julius, William and Frank, and two daughters, Mrs. Sophia Keefe and Miss Ella Noll, of Maryville.

L. A. Williams, president of the Marysville (Calif.) Brick Company, announces that at a recent meeting of the directors of the company it was decided to equip the plant throughout with electrically operated machinery. The plant has an annual output of 4,000,000 brick for which there is a good demand.

At the annual meeting of the Purington Paving Brick Co., Galesburg, Ill., January 20, the following officers and directors were elected: President, F. G. Matteson; vice-president, O. N. Custer; secretary, W. E. Terwilliger; directors, F. G. Matteson, O. N. Custer, W. E. Phillips, W. H. Pankey, Geo. C. Gale, P. S. McCarthy and W. E. Terwilliger.

The American Encaustic Tiling Company, of Zanesville, Ohio, recently closed a deal for three more Harrop Car tunnel kilns. When completed the company will have five tunnel kilns of the Harrop make. Mr. Carl B. Harrop, the inventor and builder of the Harrop kiln, advises us he has also closed a contract with the Los Angeles Press Brick Company of Los Angeles, Calif., for a Harrop kiln for burning both roofing tile and brick.

A number of tests of the shale and clay in the vicinity of Big Stone Gap, Va., show that same are well adapted to the manufacture of a good building brick, and the new Kiwanis Club, which has recently been started in that town, is back of a movement to get a good live man to start a brick plant there. W. G. Coutts is interested and will be glad to hear from anyone desiring to locate a good brick-making plant in a growing town.

The Whitesville Brick & Lumber Co., Corsicana, Texas, has increased its capital stock to \$150,000.

The Dade City Brick Works has been organized at Dade City, Florida, with \$250,000 capital stock. They will at once erect a plant for the manufacture of brick.

At private sale, February 6, Wellington J. Griffith, of Tiffin, purchased The Mohawk Clay Products Company property at Perrysville, Ohio, for the consideration of \$17,000.

The Richmond Pressed Brick Co., Richmond, Calif., is making preparations to make extensive additions and improvements to its plant, which will make it one of the largest in that section.

The Gratztown Brick Works of West Newton, Pa., after a shutdown of two years, is again in operation and turning out a good grade of building brick. Mr. Bigi and Eugene Servi have taken over the plant, which they expect to operate to full capacity throughout the year.

Annual meeting of the stockholders of the Hazleton (Pa.) Brick Company was held early in the month and elected Max Friedlander president. Reports submitted to the stockholders present showed that the Hazleton Brick Company has just closed a very profitable and successful year.

The new factory of the Stillwater Clay Co., located at Uhrichsville, Ohio, is rapidly nearing completion, and they hope to have it running by March first. The officers of the company are H. B. Cameron, president; D. K. Laporte, vice-president; H. B. Galbreath, secretary; H. W. Westhafer, treasurer.

At the annual meeting of the stockholders of the National Sewer Pipe Co., in January, the old board of directors were re-elected and they in turn re-elected the old officers as follows: President, C. H. Clifton; vice-president, H. R. Dodge; treasurer, B. F. Paine; secretary, Mrs. Bessie I. Peterson; general manager, H. M. Sparbor. Reports showed the outlook for the coming year very good.

William Morse, foreman of the Parker-Russell Clay Plant in Wellsville, Mo., was severely injured while at work. He was preparing to "make a shot" when one of the several that had been set went off prematurely because of a short fuse. He received three broken ribs and bad bruises and cuts on his head and face. It will be some time before he is able to go back to work.

Douglas Stevens, of Danville, Ill., the energetic Second Vice-President of the National Brick Manufacturers' Association, reports an excellent outlook for business for the coming year. Common brick are now selling in his market for \$12.00 per thousand and face brick for \$20.00 to \$28.00. They are making some improvements in the plant of the Acme Brick Co., at Cayuga, Ill., of which Mr. Stevens is general manager, including the installation of the Minter system of burning brick.

The annual meeting of the stockholders of the Dunn Wire-Cut Lug Brick Company, Conneaut, Ohio, was held in the company offices, February 1, and directors and officers for the coming year were elected. A very satisfactory report was made of the business for the year just ended. No changes were made in the directors or officers and they are: F. B. Dunn, president and treasurer; G. M. Whitney, vice-president; A. W. Pelton; H. M. Sturgeon, of Erie; and S. H. Tolles, of Cleveland. Miss Blanche Kinner will again be secretary and assistant treasurer.

At the annual meeting of the stockholders of the Kokomo Brick Co., Kokomo, Ind., the old officers of the company were all re-elected, and it was decided to purchase new equipment for the plant, including a gasoline locomotive. The reports showed the company's business in 1922 was exceptionally good, and the prospects are that the coming year will be even

HIGH GRADE
OF EVERY KIND CLAYS FOR EVERY PURPOSE
UNITED CLAY MINES CORPORATION, TRENTON, N. J.

Protect Costly Kilns with Tecktonius Fasteners

BEST by any Test, any Comparison, any Investigation you care to make.

You can prove to your own satisfaction that TECKTONIUS Fasteners are recognized for their **Strength, Simplicity, Economy, and Durability.**

TECKTONIUS Fasteners grip bands and plates with a **never-failing** wedge action. They are **stronger** than the best rivet job. They are **stronger** than the band itself.

Anderson, Ind.

We have been using your Kiln Band Fasteners for a great many years and have in use 476 of these Fasteners. They have always given entire satisfaction and we expect to place an order shortly for about 100 more of them.

THE NATIONAL TILE COMPANY,
Harry Haugh, Secretary.

South River, N. J.

We have used the Tecktonius Kiln Band Fastener and found it to be the best of its type on the market. It is especially useful when a band breaks while the kiln is in fire; the Tecktonius Fastener can be applied in a few minutes.

AMERICAN ENAMELED BRICK
& TILE CO.,
Chas. E. Jacquart, Sup't.

McKeesport, Pa.

We have ten down draft kilns, some 36-ft. and 41-ft. in diameter, all equipped with Tecktonius Kiln Band Fasteners. We have been using your fasteners for ten years and do not believe that we could find any better.

LAYTON FIRE CLAY COMPANY,
C. H. Pack.

Brookville, Pa.

We are using the Tecktonius Lug on the majority of our 18 kilns and consider them the most convenient and satisfactory method of handling the Kiln Band problem that we have come into contact with. Some of our lugs have been in use over fifteen years and have never had a failure or slip of any kind.

THE HUMPHREY BRICK
& TILE CO.,
L. B. Humphrey.

Springfield, Ill.

We wish to thank you for the attention you gave us on our last order for Kiln Band Fasteners. We have been using your Fasteners for the past fifteen years and the writer has yet to see one of them break or loosen under strain. They are successful in every way and we have recommended their use.

POSTON BRICK
COMPANY,
E. V. Poston, Manager.

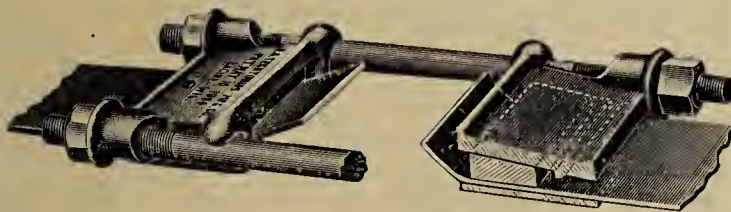
Wellsville, Mo.

We have been using your Kiln Band Fasteners for a number of years and have found them entirely satisfactory in every way. They are conveniently adjusted to the bands and furthermore we have never found any of them which failed to hold all the pressure we could put upon them.

They have been very satisfactory and we are pleased to recommend them to anyone.

WELLSVILLE FIRE
BRICK CO.,
H. G. Kiger, Manager.

The Famous TECKTONIUS Rivetless Fastener



Read marginal letters from users. They tell a story of **ECONOMY, CONVENIENCE, and DURABILITY** that cannot fail to make the careful manufacturer a TECKTONIUS Fastener user.

**MORE THAN 500 CLAYWORKERS USE
TECKTONIUS FASTENERS**

Send for Catalog and Price List by return mail.

Mexico, Mo.

We have been using the Tecktonius Kiln Band Fasteners since our plant was originally built and have found them very satisfactory. The best we can say for them is we shall always equip with Tecktonius.

A. F. GREEN FIRE
BRICK COMPANY,
J. B. Arthur,
Vice-Pres. & Gen'l. Mgr.

Monroe, Wisconsin.

We are very well pleased with your kiln bands and fasteners. They are very easily put on and it can be done without the aid of a mechanic and we find that they hold very well.

MONROE BRICK WORKS,
R. Schober.

Paducah, Kentucky.

The Kiln Band Fasteners which we purchased from you at least twenty years ago are still in good condition on our kilns and have never failed to do their duty.

If in need of more fasteners, we certainly would order them from your company.

PADUCAH POTTERY
COMPANY, Inc.,
M. H. Riddell.

Clearfield, Pa.

We have used your Kiln Band Fasteners since the year 1914 and have found them satisfactory in every particular.

PATERSON FIRE
BRICK CO.,
R. B. Paterson.

Mecca, Ind.

Relative to the Tecktonius Kiln Band Fastener, wish to say: We have found it so satisfactory that for the last fifteen years we have used none but the Tecktonius.

WM. E. DEE CLAY
MFG. CO.,
J. J. Kearns.

Kansas City, Mo.

We have used Tecktonius Kiln Band Fasteners on our kilns at this plant for eight years. We have had absolutely no trouble with them and can honestly recommend them to anyone requiring fasteners.

K. C. TERRA COTTA
& FAIENCE CO.,
Jas. J. Parsons, Manager.

E. C. TECKTONIUS MFG. CO.

RACINE JUNCTION, WISCONSIN

better. The officers of the company are J. E. Fredrick, president; D. W. Butz, vice-president; Willis Dye, treasurer; Elmer Danner, secretary, and O. M. Booher, assistant secretary and treasurer.

John Brotherlin, general superintendent of the Hiram Swank's Sons' fire brick plants at Clymer, Pa., died February 8, at the Altoona, Pa., hospital, death being due to pneumonia. Mr. Brotherlin was forty-four years old and had been engaged in the clayworking business all his life.

Oil in place of coal for operating the brick yard and kiln of the E. L. Cook Brick Company on the banks of Bridgewater river at Titicut, Mass., near the state farm, is proposed and experiments are being conducted to assue the practicality of the change, giving oil a thorough test.

J. P. Mauer, secretary of the Sumter Brick Works, Sumter, S. C., died February 1, after an illness extending over a couple of years. Mr. Maurer was born in Traverton, Pa., August 12, 1869. Some twenty years ago he moved to Sumter, and later became associated with the Sumter Brick Works, and his death is not only a loss to the company but to the community.

The annual meeting of the stockholders of the Smith Brick & Tile Company, Sheffield, Iowa, was held the latter part of January and the following officers elected: C. L. Smith, president; W. L. Harding and H. H. Storck, vice-presidents; C. J. LeValley, secretary; Wm. Storck, treasurer. The company is planning to complete the erection of its plant in the spring and place the same in shape to operate.

The McArthur Brick Co., McArthur, Ohio, has been awarded the contract to furnish the brick for the government veterans' hospital buildings at Camp Sherman. There will be fifteen buildings or more erected, all of brick. The delivery of the brick has already begun from the company's Puritan plant at Hamden. To fill this contract will require between two and three million brick. The company will also furnish from the Puritan plant the brick for the new high school building at Wellston. This contract calls for about 800,000 brick.

The newly complete brickmaking plant of Shepher & Moomaw Co., at Sugar Creek, Ohio, was started early in January. The entire plant is of brick and hollow block construction, and is equipped throughout with up-to-date machinery and appliances. The company is now operating a large plant on fireproofing, drain tile and hollow tile, at Sugar Creek. In fact the little town of Sugar Creek is quite a clayworking center, as there are two other plants there, the Sugar Creek Clay Products Company and the Finzer Clay Company, each turning out building brick.

The Hydraulic Pressed Brick Co., of Reynoldsville, Pa., expect to manufacture 1,000,000 bricks a month during 1923. The demand for all kinds of building material is very brisk in that section and the indications are that it will continue to be for several years.

At a meeting of the stockholders of the Ross Clay Products Co., of Uhrichsville, Ohio, recently, it was decided to increase the stock of the company and erect a new factory at Lock 17, on a 200 acre farm purchased from Peter Bros. The new plant will have fourteen 32-foot kilns.

Creighton Oakes and Ralph Fry, both employed at the plant of the Wellsville (Mo.) Fire Brick Company, were injured while at work for the company. Fry stuck a pick in his foot while digging clay, and Oakes was injured in the mine of the company near here.

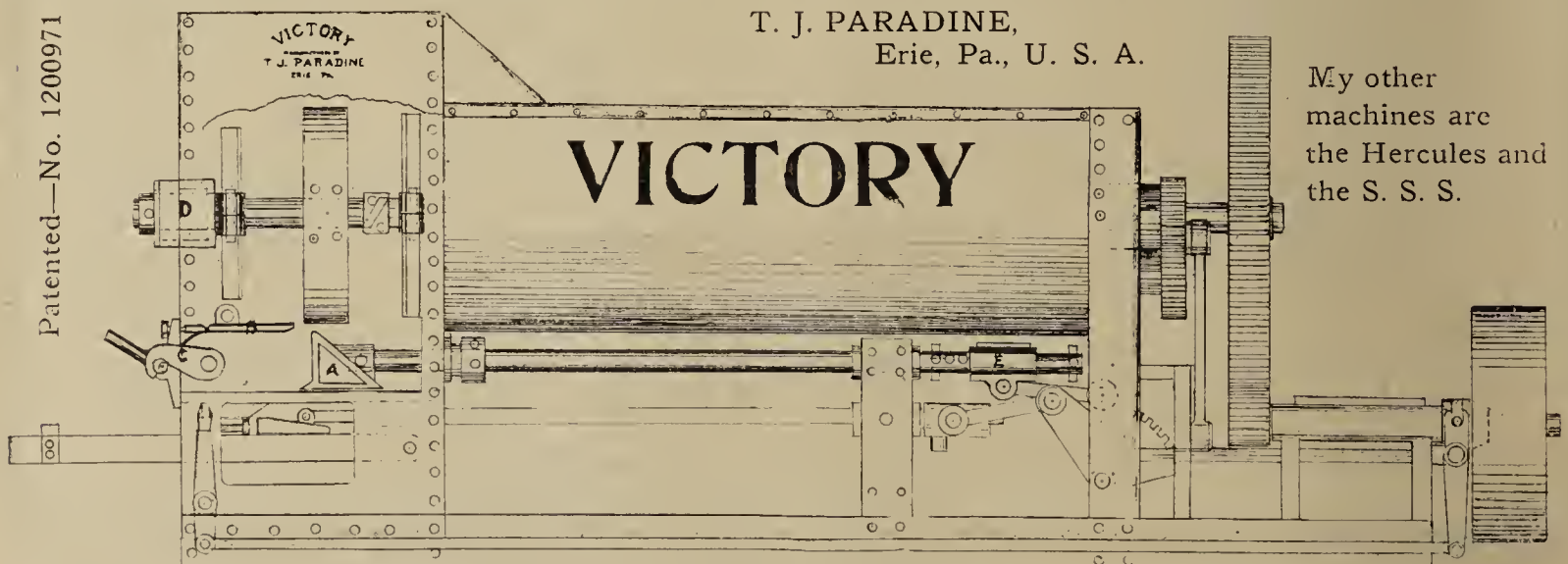
A. J. Wittak, secretary of the William E. Dee Company, Mecca, Ind., manufacturers and merchandisers of vitrified clay products with headquarters at 30 N. LaSalle street, Chicago, Ill., announces that the company has established a new distributing yard at One Hundred and Fiftieth street and Center avenue, Harvey.

The Oskaloosa (Iowa) plant of the Standard Clay Products Co., has reopened and has a force of forty men employed. T. J. Neiswanger, who is directing the business, says the year of 1923 promises to be the best in the history of the establishment. Orders are pouring in, indicating a big year in building. The plant was closed down a short time during which necessary repairs were made to the equipment.

IOWA PLANT DESTROYED BY FIRE.

An estimated loss of \$100,000 was sustained by the Sioux City Brick and Tile Company when fire gutted the machine shed, drying rooms and storage building of their main plant in North Riverside, Sioux City, Iowa, Sunday afternoon, February 11. The entire plant had been remodeled and electrified last fall. Damage to the new machinery installed brings the total loss to \$100,000. The fire started in the machine rooms, it is believed. Fanned by a strong wind the flames quickly spread to the dryer. Grinding machines, conveyors and other machinery were ruined in the machine shed. The buildings were constructed of wood and brick. A new concrete shed, under construction, was destroyed. D. P. Mahoney, president and general manager of the company, announced the day following the fire that the plant would be rebuilt at once, and they hope to have it ready for operation in the early spring and to be one of the finest in the middle west.

VICTORY—IT IS SIMPLE, STRONG AND DURABLE. WILL LAST A LIFETIME. MADE OF 3/8-IN. BOILER PLATE, MOUNTED ON 8x8x1/2 IN. STEEL ANGLES. RUNS QUIETLY. WILL MAKE BRICK OR SLABS STIFF ENOUGH TO HANDLE. REQUIRES NO STRIKER AND BUT HALF THE POWER REQUIRED BY THE OLD MACHINES. THUS SAVING IN ONE YEAR ENOUGH TO PAY FOR ITSELF. A 5-YEAR GUARANTEE WILL BE GIVEN.



Reduce Your Burning Costs

We have positive proof that—

One of our kilns is equal in durability to two average kilns.

That two of our kilns in operation will produce as much ware as *three* average periodical kilns, and that this saves first cost at the rate of 33 1-3% for your kilns on a CAPACITY BASIS.

Reduce Your Burning Costs

We have positive proof that—

We can dry and burn the ware with less than half the fuel required for average periodical kiln operation.

That our system delivers the goods.—It lasts—stays put—is easy to build and operate—and means more than a “*saving in Burning Costs.*”

Reduce Your Burning Costs

We Can Refer You—

To many satisfied users on whose plants you can see for yourself how economical and serviceable in every way is the MINTER SYSTEM.

Write for complete details and plants using our system.

THE MINTER SYSTEM

—200 lbs. coal per ton of ware—

Albany = GEORGIA = Columbus

ANNUAL CONVENTION C. B. M. A.

(Continued from page 142.)

Mr. W. P. Carroll, Asst. Secy., Building Trades Employers' Assn., Cleveland, made an informal talk on "Bricklaying Apprentice Schools." He stated that the first school was established in Cleveland twelve years ago and at that time the idea prevailed that bricklayers could be produced this way in short time but this proved a failure and the school was abandoned. The idea of apprenticeship schools was talked continuously for five or six years without result and finally the union took up the work but this also proved a failure. Last year the present school was established in Cleveland with an enrollment of 170 boys who are required to attend school a certain number of hours weekly and take a four years course. He gave rules and requirements working in conjunction with the unions, stating that the contractors had to give the boys a thirty day trial.

Mr. Boyd made a short talk emphasizing the more important parts in the building code and brick tests on Ideal Wall and his objection to specification as regards party walls. He called attention to what other manufacturers were doing, showed where brick lost goodly orders to concrete for lack of sufficient supply and urged that the members stock up the building supply dealers and meet the requirements in this connection. He urged more careful study of unemployed, bricklaying, scaffolding and other points around the job where improved conditions would save time and labor and mentioned an editorial in The Clay-Worker referring to bricklaying schools.

The Board of Directors reported the following selection of officers which was unanimously approved:

Officers Elected.

President, Chas. H. Bryan, Detroit, Mich.; 1st Vice President, Wm. Cary, Albany, N. Y.; 2nd Vice President, John P. Cahoon, Salt Lake City, Utah; 3rd Vice President, Jordan Pugh, Norfolk, Va.; 4th Vice President, B. F. Webber, Chicago, Ill.; Secretary Mgr., Ralph Stoddard, Cleveland, Ohio; Treasurer, Ernest Barkwill, Cleveland, O.; and Assistant to President, Charles A. Bowen, Cleveland, O. J. A. Pugh succeeded Fritz Salmen, and B. F. Webber succeeded Wm. H. Hammond as Vice-Presidents, and O. B. Robertson, Gonzales, Texas, succeeded Fritz Salmen as Director for one year; all other directors were re-elected.

The discussion on bricklaying schools was then taken up. Mr. Preece, Vice President of the International Bricklayers, Mason and Plasterers' Union, making an encouraging talk on business conditions and prophesied an increasing supply of bricklayers.

Arthur E. Foote, Washington, D. C., Dept. Simplified Practice, brought a message from Secy. Hoover urging the elimination of waste and that a committee be appointed to take up the question of simplification, the standardizing of the brick business.

Mr. Simons of California then made a strong appeal for the selecting of Los Angeles as the meeting place for next year and was followed by Mr. Cahoon who stated that brickmakers in his section were extremely anxious to have them come to Salt Lake City, Utah.

After some delay it was announced that the Committee on Resolutions was not ready to report and the Convention was adjourned. All present agreed that this was the best meeting in the history of the C. B. M. A.

HOLLOW TILE FARM LITERATURE.

THERE IS EVIDENCE that the Hollow Building Tile Association is getting some splendid literature before the farmers of the country. Recent specific articles announced as having been placed with different farm papers, include an article on "A Practical Farm Hog House," in the Indiana Farmers' Guide. A story of the swine barn at the Lawrence Farm, in several farm papers. Also other stories pertaining to the modern hog house, all of which makes interesting reading and is good stuff to help direct the attention of the farmers toward hollow building tile and its possibilities of usefulness on the farm.

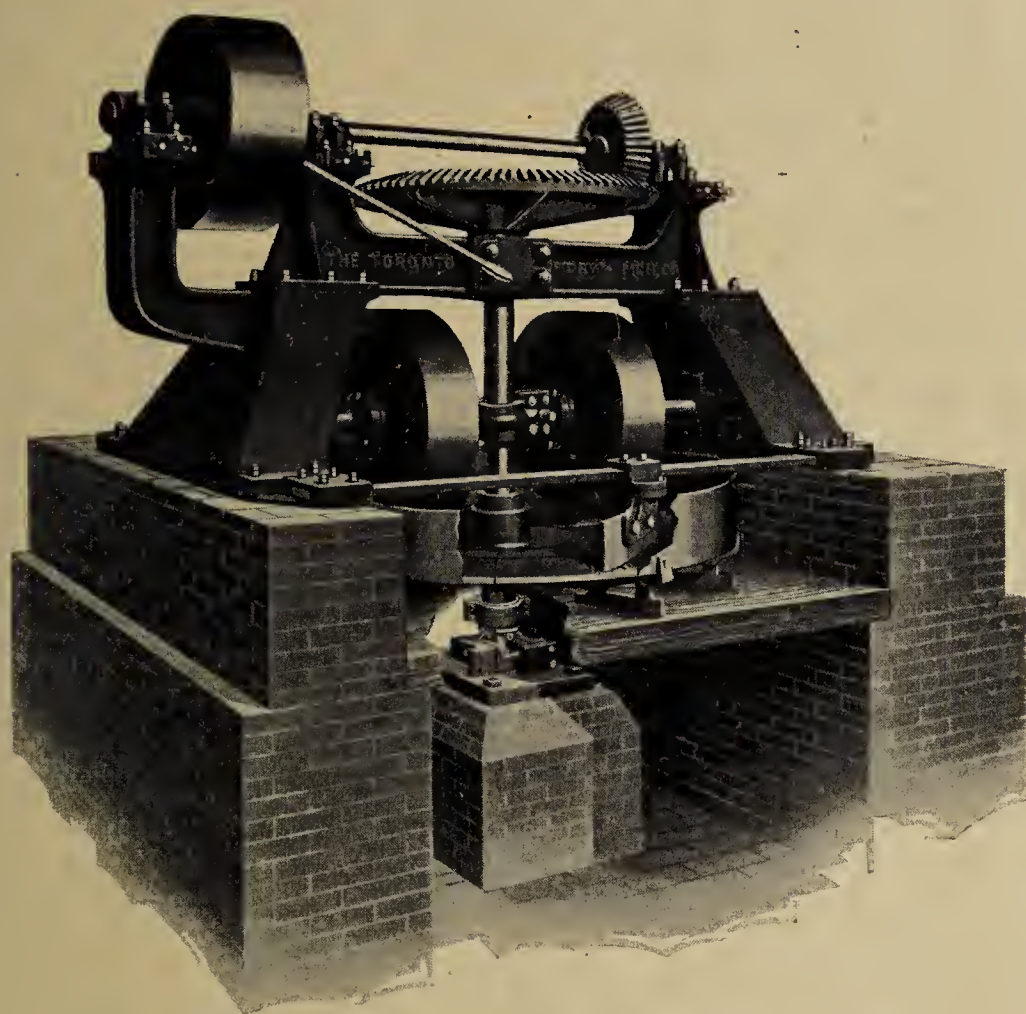
THE LIME CENSUS.

A SPECIAL BULLETIN from the Department of Commerce says there was some decrease in the activities of the lime industry during 1921, as compared to 1919. The production for the year had a value of \$30,977,500, which is 8.8 per cent less than in 1919. This showing is really not out of keeping with industry generally and should be made up for when the returns for 1922 come in, because 1922 was a year of recovery and more activity all around. There is an interesting question, however, if lime is to play as important a part in building operations in the future as in the past. Cement mortar has made interesting progress, and the architectural demand for the gray colors of cement is helping out. So undoubtedly the percentage of cement used in mortar has increased steadily and partly at the expense of lime. The same is true in the progress of gypsum in wall plaster where lime was at one time the main ingredient. On the other hand, there has been steady progress in hydrated lime and in the use of lime in agricultural and in chemical industries and these may more than make up for any curtailment in the building industries.

FIVE MILES FROM CENTER OF BOSTON
 32 Acres of Proved Clay Property.
 800 ft. Frontage on Boston & Maine R.R.
 Adjoins present plant of National Fireproofing Co.
 Price \$30,000.00 for quick sale.
 JAMES J. SCULLY, 118 First St., Cambridge, Mass.

THE NAME TORONTO

ON A DRY PAN
MEANS
A BETTER PAN FOR THE
MONEY



TYPE 'B' 10FT. DRY PAN

We will see you at the convention again next year.
In the meantime send us your inquiries.

THE TORONTO FOUNDRY & MACHINE CO.
TORONTO, OHIO

Mention THE CLAY-WORKER.



Where CLEARFIELD Pans Are Built

For fifty years we have been leading the way in Wet and Dry Pan construction. In our new plant just completed, we are now better equipped than ever for the economical production of this class of machinery. Let us help you solve your grinding and tempering problems.

Clearfield Machine Shops

Clearfield, Penna.

The Low Priced Digger

For the Average Plant

A Digger and Loader especially designed to meet the requirements of the plants having capacity of from 25,000 to 100,000 per day. Fills the gap between hand labor and high priced shovel equipment.

Track or Caterpillar Mounting. Gasoline or Electric Power

Mixes the clay as it digs. Capacity up to 300 tons in 10 hours. You should have a digger this year.

BAY CITY DREDGE WORKS

2711 Center Ave.

Bay City, Mich.



AMERICAN CERAMIC SOCIETY.

(Continued from page 151.)

other similar studies help to elevate and inspire. The sciences are studies in the truth in the physical world and we cannot study same without being thoroughly drilled from beginning to end in truth, for truth superseded everything else. So a scientist must be intellectually honest and since engineering is the application of science to the needs of man, it is the ideal education for building up the primarily sincere attitude of mind. To get the proper prospectus of engineering we must be educated to think sanely, soundly with fixed principles, reasoning from known demonstrable physical facts.

He stated that engineers were better equipped than any other type to take up larger, higher positions in the world as managers and leaders and should have a better vision of his responsibility to society. He cited Secretary Hoover as the engineering type of mind that applied his thinking to social ends and that while engineering education should build up a reasoning platform before cultural, the failure of excepting branches that are cultural has narrowed many engineers and they have neglected to do their part in uplifting our moral citizenship. The ceramic engineer has a better opportunity to help his fellowmen and should assert his interest in community welfare as well as in scientific work. In closing he declared that there is too much of the hired man attitude, that the engineer should consider himself a human unit and render the largest service possible both to his industry and to his community.

Dean Cooley of the University of Michigan made an informal address on the subject, "The Work of the Federated Engineering Societies," an organization of 28 membership societies and total enrollment of over 65,000 engineers.

He declared that the engineer of forty years ago was better prepared than the engineering of today, because the latter has specialized and narrowed the field of his usefulness, and that this was common in all engineering societies so that co-operation between them was necessary.

He told the history of the formation of the Federated Engineering Societies, explained its function and work and declared that it was one of the greatest forces ever realized, for it makes available for service to mankind the combined strength of all engineers.

Some of the great benefits accruing were the investigations on waste, passage of patent legislation, shift report, public improvement of waterways, compilation of business cycles, and reforestation. There is in the making plans for investigation of the whole subject of transportation, also immigration, foreign trade and Muscle Shoals.

Dr. H. Foster Bain, Chief of the Bureau of Mines, talked on the research work being accomplished by his bureau for the government and declared that this work would help the individual firm when the flow of emigrants will decrease in the future, but that we must change our policies to meet conditions.

Walter Rosenhain, superintendent of Metallurgical Department National Physical Laboratory, Teddington, England, made a most interesting talk on the work that had been accomplished and their present program. (He is the author of the only work in the English language covering the scientific and technological aspects of glass and its manufacture and was responsible for a large part of the war-time development of optical glass in England.)

E. W. Washburn, of the editorial staff at Washington, D. C., detailed the work incident to the gathering of International Critical Tables of Numerical Data of Physics, Chemistry and Technology. This will include complete information regarding properties of ceramic materials.

A. L. Scott of the American Hotels Associations, explained the scope of their research work and their endeavor to secure more dignity and efficiency in their business, with a definite, more comprehensive policy of education, accounting and engineering. They are striving to standardize their entire business. He urged the ceramists to standardize their products to meet the demands that will be made by their association.

This concluded the General Session. A reception and tea served by the local entertainment committee was much enjoyed from 4 to 5:30 o'clock that afternoon in a parlor adjacent to the Convention Hall.

Tuesday morning the various divisions met separately in rooms at the Fort Pitt Hotel as per schedule printed in the program.

(Continued on page 181.)

AMERICAN CERAMIC SOCIETY.

(Continued from page 172.)

The Heavy Clay Products Division.

This division met in dining rooms A, B, C, where ample facilities obtained for lantern and proper seating arrangement.

C. Forrest Tefft acted as chairman, and Amos Potts, secretary.

The first paper was by F. T. Owens on "Importance of Figuring Taxes Into Costs." He explained why he thought we were going to be taxed more heavily and urged the necessity for careful study of this expense item and the need of figuring same into the cost price.

"Keeping Costs to a Minimum," by L. B. Rainey, pointed out ways to economy in stockroom arrangement and management.

"Depreciation Costs and How to Handle Them," by D. F. Stevens, showed that depreciation, next to taxes, is the element least understood. The average life of equipment can be learned from the manufacturer, but your own experience should be taken first. The proper handling of replacement charges in cost records was Mr. Stevens' main point.

There followed a long discussion on factors of depreciation and clay depletion charges and how to enter them into the cost accounting records to meet government requirement and safeguard the manufacturer in correct cost finding.

"Wastes that Should be Eliminated in Heavy Clay Products Manufacture," by Marion Blair, showed where the wastes generally occur unnoticed on the average plant in the handling of coal, oil, in the care of equipment, lack of covering for steam lines, improper drying, burning, handling of ware, incorrect use or total absence of pyrometers, and other waste saving instruments, time lost in making repairs, (parts ordered after breakdown instead of before), and the waste in guesswork. He declared the proper solution for waste on the clay plant was the employment of competent trained minds in important positions at a satisfactory salary and sufficient assistance to make each department efficiently operated.

This paper created a great deal of discussion led by B. Mifflin Hood and large number of ceramists present. The consensus of opinion was that more attention must be paid to this problem, that the elimination of waste would make the individual plant better fitted to compete with other manufacturing concerns and that technically trained men should be secured to put the business on a higher plane.

Mr. W. P. Blair placed before the meeting a petition to the American Society of Testing Material for the placing of all clay products under one division and the exclusion of synthetic materials from same and urged that the American Ceramic Society strongly endorse same and take the action necessary to secure the needed separate classification. This was unanimously adopted.

The afternoon session included many interesting papers that were thoroughly discussed, such as:

"A Study on the Various Methods of Clay Gathering," by Davis Brown; "Elimination of Limestone Pebbles From Clay," by Roy A. Horning; "The Magnetic Separation of Iron Bearing Minerals From Clay," by H. G. Schurecht; "Some Calculations Involved in the Drying of Clay Wares," by Hewitt Wilson; "Green Surface Colors on Shale Brick," by R. K. Hursh, and "Complete Description of the Proctor Dryer for Heavy Clay Products," by F. H. Rhoads.

Following Mr. Brown's paper there was considerable discussion on the comparative benefits and proper uses of the shale planer and the steam shovel and the power required.

A discussion on use of crusher and various types of screens for removing lime pebbles brought out the point that much dissatisfaction has been experienced in the use of the Williams hammer crusher.

Preston Penfield of the Hadfield-Penfield Steel Co., Bucyrus, Ohio, showed three moving picture films, one of the automatic handling of common brick by the McDuffney Brick Co., Mechanicsville, N. Y., another the Chicago method of setting brick and the last, the film taken on the Bradford Press Brick Company's plant. The latter illustrated Mr. Rhoad's talk on the Proctor Drier.

The first paper on the Wednesday morning program was by C. Forest Tefft on the subject, "A Description of An Induced Draft Burning System That Has Been in Operation for Eight Years." This was a finely prepared paper, well illustrated.

(Continued on page 182)

Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terra cotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

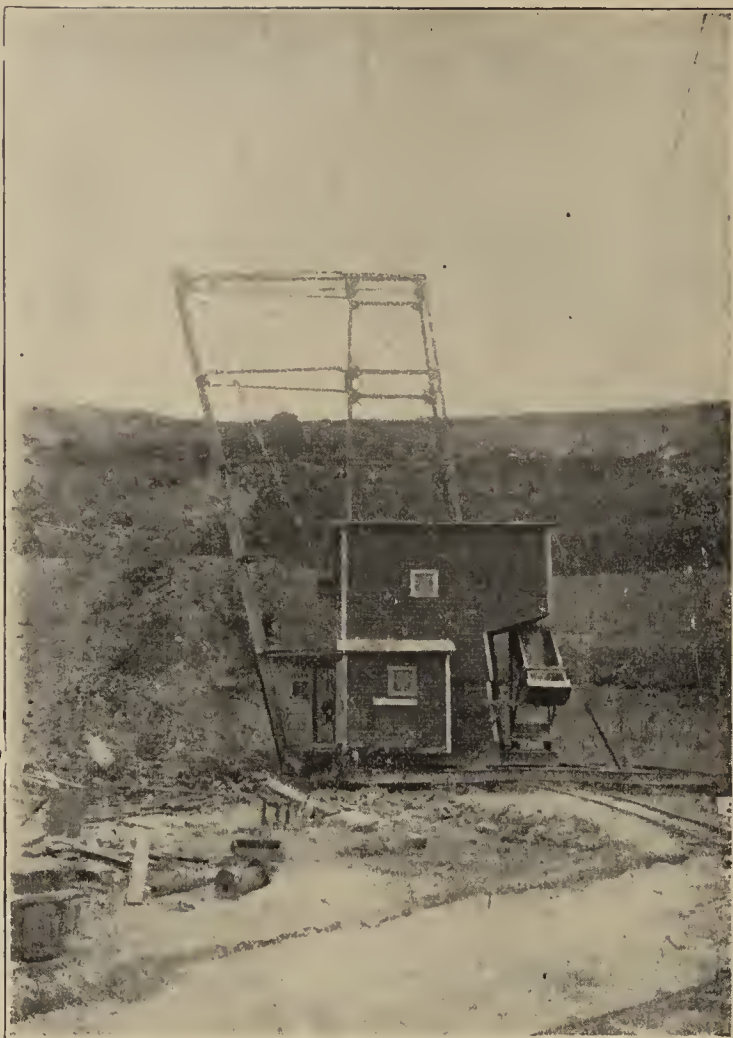
The book also contains a supplement on the subject of Crazing, Its Cause and Prevention.

Price \$5.00

T. A. Randall & Co.

Publishers

Indianapolis, Ind.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

AMERICAN CERAMIC SOCIETY.

(Continued from page 181.)

trated, describing the work carried on at the Milton plant of the Fiske Co. This detailed the investigation of every item of burning to find inefficiencies and defects and correction of same; the use of cones, thermo couples, pyrometers, draft gauges and other instruments; the alternate firing of doors; study of draft conditions; analysis of flue gases; measure of settle and tabulation of results obtained from 40 burns.

An expert ceramist is used on this plant for the sole purpose of studying kiln conditions, taking samples of flue gas, recording draft, settle, temperature, etc. They consider the work of great benefit to their business and urge others to take similar steps.

A long discussion followed this paper on the question of where to take sample of gas and the consensus of opinion was at lower portion of stack. The control of excess air, the free air going into fire boxes, kiln leakage, etc., were topics also considered. Marion Blair stated that when plant owners keep a trained man on the plant for the making of a careful study of all conditions and for gathering data they will get somewhere in solving the burning problems.

"Some Investigations on Burning of Brick Kilns," by Robert M. Campbell, showed results of investigation carried on along similar lines set by Bureau of Mines and the gains made in reduction of time, fuel and improved ware.

At this point the nominating committee reported the selection of R. B. Keplinger, Chairman; M. W. Blair, Vice-Chairman; A. P. Potts, Secretary. Research Committee, G. A. Bole, G. W. Shoemaker, W. D. Richardson and B. Mifflin Hood; Standards, H. G. Schurecht, and R. A. Horning; Data, R. K. Hursh; Membership, W. H. Herbert; Rules, W. W. Ittner; Nomination, C. F. Tefft, and Councillors W. N. Cary, E. W. Dailey, G. A. Bole and F. T. Owens. The report was unanimously approved and Chairman Keplinger took the chair.

"Details of Automatic Stoker for Firing Heavy Clay Products," by John Martin, was a valuable contribution that created considerable discussion. This showed the various forms of coal as fuel on periodic kilns, and the great advantage in the continuous manner of feeding, saving of labor and the possibility of using inferior coal by means of mechanical stokers. Mr. Martin detailed the development of stokers, described the working principles of several types and gave as his opinion that the under-feed stoker with forced draft was best. He saves 40 per cent fuel using inferior coal and burns in 2½ days where formerly it required 8 days.

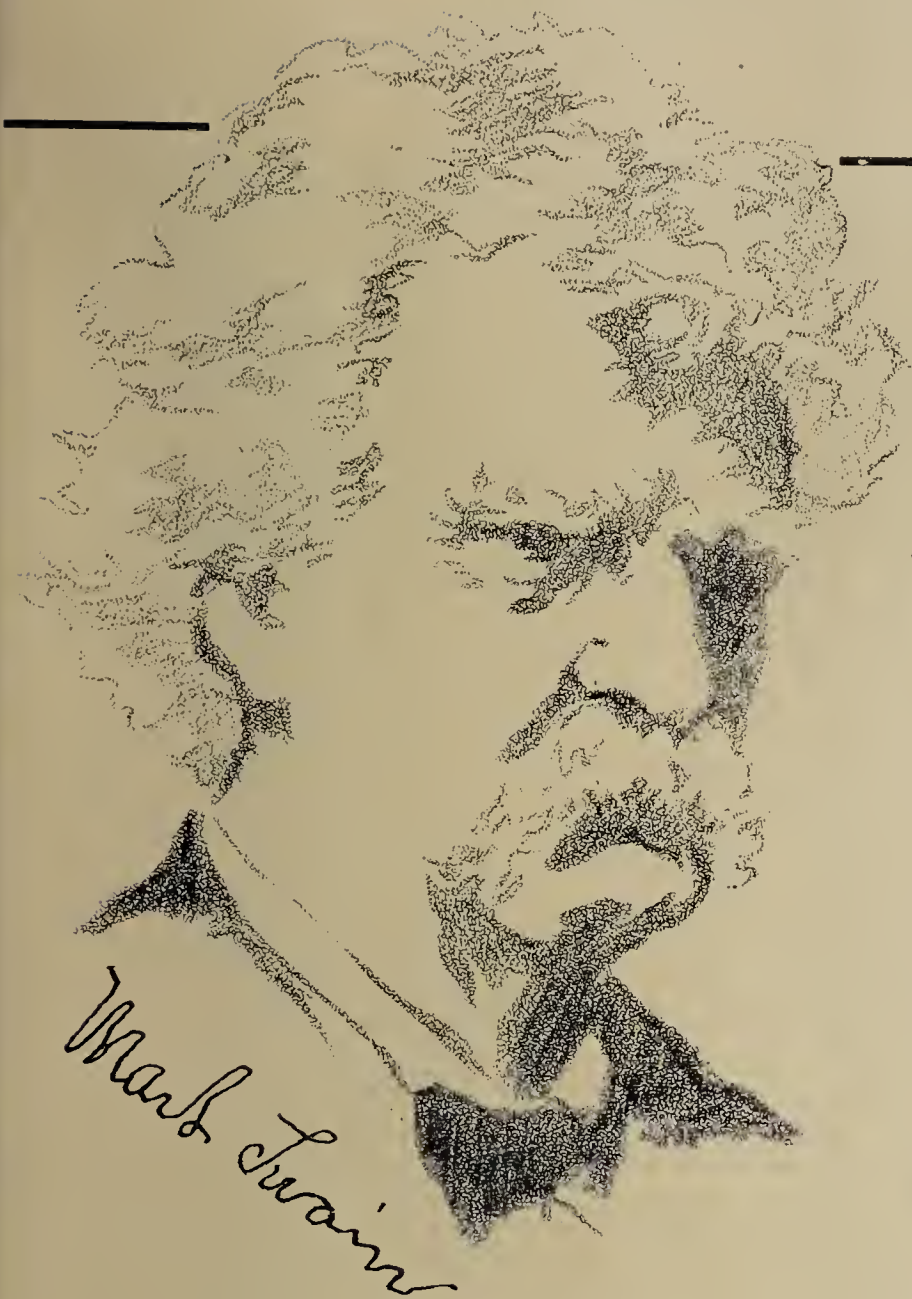
Major Gates was called upon to give a short talk on the use of stokers, as also was W. D. Richardson, who detailed advantages of producer gas and the continuous kiln.

"Heat Distribution of Some Ceramic Kilns," by H. G. Schurecht; "The Value of Cold End Connection of Thermo Couples," by C. B. Thwing, and "Fire Tests on Hollow Ware," by H. D. Foster, completed the program, and the session was closed with a moving picture reel showing operation of Procter-Schwartz drier on various types of plants.

Refractories Division.

This division held four sessions in the Empire Room, Fort Pitt Hotel. J. Spotts McDowell was Chairman, Fred A. Harvey, Secretary. Over twenty papers were presented, covering all the various angles of the business. The sessions were well attended, the average being 100. An innovation was the placing on the program for the third and fourth sessions of consumers (non-members) who presented papers on their problems. Dr. Lyons, of the U. S. Bureau of Mines, was

(Continued on page 184.)



Brick Makers Do It Too!

We wonder if Mark Twain lived near a brick-yard when he said "Everybody talks about the weather but nobody does anything about it."

Of course, a brick manufacturer cannot control the weather nor accurately foretell weather conditions but he can make himself independent of the weather—and a lot of progressive manufacturers do.

The man who owns a Martin Steam Pipe Rack Dryer does not have to send the men home, close up the yard and wait for sunshine.

Instead, he produces brick—Winter and Summer, rain or shine—and our customers know that the production losses avoided in one bad season are the best reason in the world for considering a Martin Dryer an investment—not an expense.

Weather INSURANCE
plus ECONOMY. Let
us tell you about both.

Lancaster Iron Works, Inc.

Lancaster, Pennsylvania, U. S. A.

Brick Machinery Dept. James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick
Plants for the Manufacture of Brick by the Soft Mud Process.

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

AMERICAN CERAMIC SOCIETY.

(Continued from page 182.)

present to lead in the discussion during these two sessions. This new arrangement of receiving first-hand information regarding consumers' desires and requirements is believed a splendid means of getting down in black and white the needs from a consumer's standpoint. The plan will be continued next year.

E. E. Ayars, American Refractories Co., Joliet, Ill., was elected Chairman; Fred A. Harvey, United States Refractories Co., Mt. Union, Pa., Vice-Chairman, and R. F. Ferguson, Mellon Institute, Pittsburgh, Pa., Secretary.

The Terra Cotta Division.

The program was short but interesting, and valuable to the membership. Sixteen papers were presented, covering such subjects as Mould Shop Practice, Slip Clays, Scheduling in Terra Cotta Plants, Requirements in Frit Furnace Design, Methods of Preparing Body Mixes, Discussion of Pulsichrome Terra Cotta Finish, a Stoker-Fired Terra Cotta Kiln, etc.

Adolph H. Hottinger, Chairman, and Robert L. Clare, Secretary, were re-elected as officers. Twenty-six registered in this division.

The Art Division.

The meetings were held in room 659. Six papers were read and discussed. F. H. Rhead was selected as Chairman and James C. Boudreau, Secretary for 1923 term. The proposed text-book to be published by the division after several years' work of compiling proper data was the main topic of discussion. Twenty-three members were in attendance.

The Glass Division.

A half hundred ceramists interested in this particular branch of the industry attended the several sessions held in the Rose Room. Nineteen papers were read and four topics given for discussion.

A. R. Payne was selected Chairman, J. H. Forsythe, Vice-Chairman, and A. E. Williams, Secretary.

The Enamels Division.

The third largest attendance of the seven—sixty-five registered in this division. Fourteen papers were read and discussed including a preliminary report on cast iron for enameling purposes. This division is to make a survey of all types of enameling furnaces, now in operation by means of a general questionnaire. The selection of officers for the year, resulted as follows:

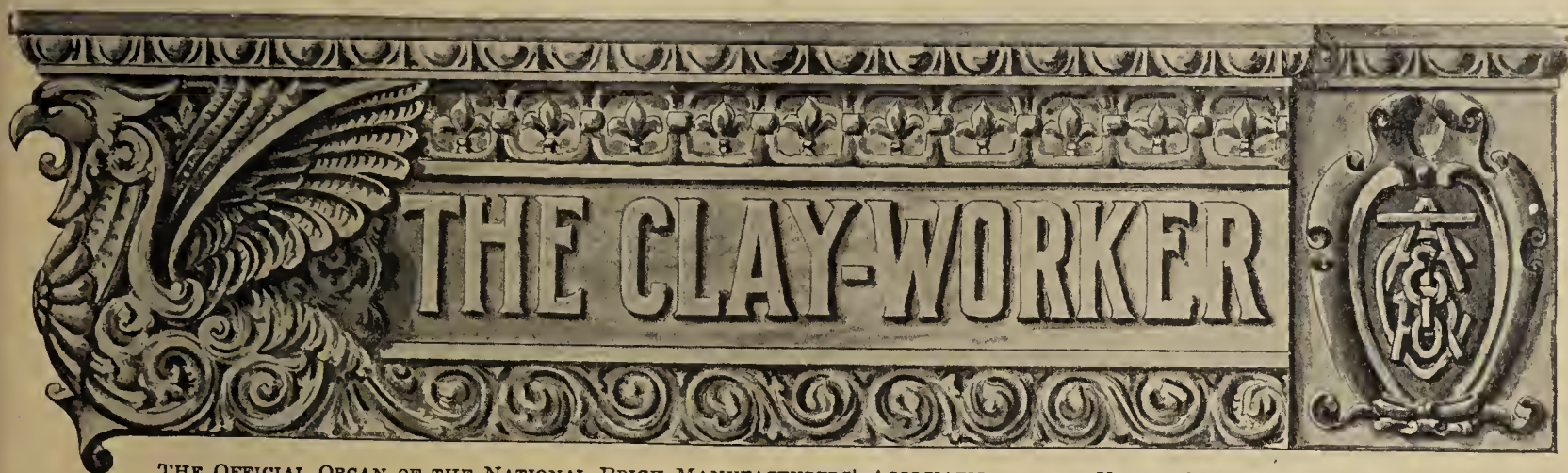
H. F. Staley, Chairman; R. R. Danielson, Secretary, and M. E. Manson, H. C. Beasley, W. C. Lindemann and DeWitt Riess, Councillors.

Whiteware Division.

This division had the largest attendance, 81 taking this as their major division. Four full-time sessions were held, about thirty papers being read and discussed. F. H. Riddle was selected Chairman and C. C. Treishel, Secretary.

The registration of the 25th annual convention showed the following classification: Art Division, 23; Terra Cotta Division, 26; Glass Division, 49; Enamel Division, 65; Heavy Clay Products Division, 65; Refractories, 73, and Whiteware, 81; ladies, 22; bureaus, 16, and not identified, 78; totaling 498.

James G. Boudreau was Chairman of the committee in charge of the exhibit of ceramic products made in a suite of rooms on the parlor floor. The delay in arrival of many exhibits prevented the display of many important wares, but the exhibits in place during the convention week were well worth the visitors' study. The products shown included pottery, faience, terra cotta, enameled cast iron, spark plugs, crucibles, mosaic tile, sanitary ware, clays, feldspar and refractory materials.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 79

INDIANAPOLIS, MARCH 14, 1923.

No. 3

OFFICIAL REPORT OF THE THIRTY-SEVENTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION, CLEVELAND, OHIO, FEBRUARY 7, 8, AND 9, 1923.*

(Continued from the February Issue of The Clay-Worker.)

SECOND SESSION.

Thursday Afternoon, February 8, 1923.

PRESIDENT BURTON: We will come to order and get down to business. What is the first order of business, Mr. Secretary?

Secretary Randall: We have a very good paper which was left over from the morning session—"Brick and Their Distribution," by C. W. Matthews, Columbus, Ohio. Mr. Matthews is not present, he intended to be here but was called to New York last week by the very serious illness of his father and has not returned. I am sure you will be interested in his paper.

BRICK AND ITS DISTRIBUTION

Wm. T. Matthews, Columbus, Ohio.

Mr. President and Gentlemen of the Committee:

"Like man, we come from the earth and we are indelibly associated with his history and progress.

"Pompous kings of ancient days and grandeur were proud to stamp our kind with their names.

"Through the centuries, we have endured, neither moth nor rust doth corrupt us.

"You see us and our kind every day, yet give us no thought.

"At times we are thrust deep into earth; again, we tower to the sky.

"Like Shadrach, Meshach, and Abednego, we pass through fire unscathed.

"Singly, we lay no claim to beauty; yet properly grouped, Solomon in all his glory surpasses us not.

"We come in style to fit every purse; in color to please every eye; in texture to suit every taste.

"We and others of our kind provide you shelter, and protect you from the elements.

"What are we?

"WE ARE BRICK." *

The distribution of our product, to my mind, is one of

the branches of our business that has been most sadly neglected, and the opportunities for improvement here are most numerous. In the final analysis the selling price of any commodity is what determines the dividends and they in turn determine the success of our corporations which today control industries. They must be successful from a financial standpoint to give us who are interested in their success the fulness of the reward that comes from the romance of business activity today. While the monetary reward I think



Wm. T. Matthews, Columbus, Ohio.

in the minds of most men is secondary to the pleasures of accomplishment of a worthy end, it is, however, necessary.

Our industry is one that justifies great pride, for there is no nobler lineage than that pertaining to clay products, and especially to brick. We find in the first place, that brick-making was the first industrial activity of mankind and was at its inception the business of kings. The king of each of the ancient cities was the brickmaker, and it was to brick the ancients entrusted the records they considered worthy of preservation.

Man is, of course, recognized as the greatest of God's

*Copyrighted, 1923, by the National Brick Manufacturers' Association.

creations—and rightly so; yet we find as far back as history records his being compared to brick in a complimentary manner. Sparta, the nation famed above all nations for the courage of its people, was the one city of the ancient Greek civilization which was not surrounded by a wall of brick, and history tells us that when a traveler asked King Lycurgus, "Where is the wall of Sparta?" turning to his army, the proudest possession of his nation, he said, "There is my wall, and every man a brick," and even today when we want to speak in a complementary manner of a man, what a common thing it is to say, "He's a brick," and as man is God's greatest work, so brick is worthy of the name of the greatest work of mankind. Without the clay products industry, civilization would not exist in its present form at least, for there is no phase of our present civilization that is not dependent in some way on burnt clay products.

Man has always, since the first discovery of the indestructibility of brick placed upon them his most sacred responsibility and task—the protection and security of his home and family than which nothing is more dear to him and for which he sacrifices all if necessary; even life itself.

These are just a few slight examples of the honor which attaches to our industry, yet how seldom do we find that justified evidence of pride in a man in our industry when



Vice-President J. Stocke, Jr., St. Louis, Mo.

he is asked what business he is in. And how many of us are perfectly content to go along having the public look upon our industry with that lack of interest which it receives. This, I believe, is due to the lack of vision and knowledge of the romance of our business on the part of our salesmen who are meeting the purchasers and users of our product, or their unwillingness to take time and give these customers a proper vision of their product and the industry they represent. This may be due to over zealotry on their part to get the order regardless of anything else. This I think, is an erroneous principle. I have a salesman in mind, who, when he wants to, can so thoroughly sell a customer on the brick that he knows the customer should use that it is common for him to change the customer's ideas in a very minutes from the red-texture brick to a smooth or texture gray in spite of the fact that there may be a difference of \$15 per thousand between the cost of the two bricks. He does this with his knowledge of the value of color and vision he has of the brick industry and its relation in importance to the contemplated home of the prospective customer and once this salesman has convinced his customer of the advisability of using the brick he recommends, I doubt if anything could change the prospect's mind except a complete change in his plans. This man's weakness is that he

does not determine to sell every customer he encounters as seriously as he should.

This is only one of the many evidences of the insignificance of the price in the purchase of face brick, and it is my opinion that where price is made a big factor in the purchase of our product it is due to the over anxiety of salesmen to get an order regardless of whether or not his particular product is suited to the particular job it is to be used on, and if we could only bring about a realization in the minds of everyone connected with the production and distribution of face brick that we are producing and selling not a building material in any sense as much as we are producing and selling a decorative material, and that the proper choice on the part of the purchaser must be made in the first place, for of all the materials that go into the erection of a home or building of any kind it lends itself less than any change. I have been able to think of nothing entering into the construction of a home that cannot be changed or altered more easily and at much less expense than the exterior brick if after incorporation into the finished building the owner is dissatisfied.

A thing that has always struck me very forcibly is the apparent lack of interest on the part of a couple building their first, or tenth home for that matter, in the face brick and brick work which is to remain the permanent exterior decoration while the building stands.

Their greatest concern has always seemed to me to be getting their house under roof and ready for the trim, at which time their deep interest becomes keen and they begin planning the color of the trim, location of their furniture and the placing of the necessary built-in features. Particularly, is this noticeable in the bathroom, which is also to my mind a splendid example of the average person's willingness to pay for what he wants. No one can or ever has questioned the serviceability of the old fashioned enameled iron bath tub and bracket basin. It cannot be said that a bath in the enameled tub that used to stand on four balls held in lion's claws is one bit less refreshing than a bath in a built-in tub, yet home builders will pay from \$60 up more for the built-in tub. And no one would argue that hands could be washed any cleaner in a pedestal basin than in one bracketed to the wall; yet without any hesitation the purchaser selects the pedestal style and pays at least \$40 more for it. In these two items the difference between what would be just as serviceable and what they want is \$100 which would amount to \$6 a thousand on the face brick used in the average home, and yet we find these same people shopping to save 50c a thousand on face brick, when everybody in their community is going to see or be privileged to see the exterior of their home and judge the interior by it, and how few people, comparatively, are going to be privileged to enter the home and judge of its interior beauties and conveniences. It is not the people's fault. It is the fault of the brick man that he does not take the sale of face brick more seriously.

Another place I think our industry is very weak is, in the willingness of a great many dealers and manufacturers, too, who sell direct, to quote one price and accept an order finally at a reduced price. There is nothing to my mind that so inspires confidence in the mind of the buying public as a one-price policy, and I feel that the sound principle on which to sell to the public is to arrive at the lowest possible price at which any article is to be sold, including all items of cost and a proper reward, and then sell it at that price. If it is not worth a price arrived at in that way it is not worth producing. A few months ago, the man heralded around the world as the greatest merchant the world has ever seen, passed away. He made his enviable reputation by being the first man to adopt a one-price policy in selling his merchandise, and in this way gained the confidence of the buying public.

We should, I think, make every effort and keep before us at all times a desire to reduce the cost of production and distribution of our product, but this reduction should not be accomplished at the expense of the public nor the reputation

of the industry. Our aim should be to give the public the most possible value in quality and effect, and I feel certain with the proper presentation, purchasers will show a willingness to pay a fair price for their clay product needs. This cannot be brought about by employing salesmen on a price basis. We have been too inclined, in my opinion, to feel that the margin of profit was so small for the dealer that he had of necessity to hire young salesmen who could be gotten reasonably; then when these men really became salesmen and of value to the industry, they were permitted to be lured to other industries which showed the possibilities of greater rewards, and had to be replaced again with inexperienced men because it was thought they could not be paid sufficient remuneration in our business. This I think is a fallacy, and I believe that the business should be put on such a plane that the young man attracted to it can feel that there is a future for him and not that he can use the brick business as a stepping stone to success in some other line of endeavor. Then these men will be interested enough to get the proper vision of our industry, and they, in turn, will impart that vision to the buying public who can, and thereby will, be made to see the wisdom of buying face brick for its decorative value and not because they save fifty cents a thousand.

Then might we well say with Berton Braley;

"Business is business," the Little Man said,
 "A battle where 'Everything goes',
 Where the only gospel is 'get ahead',
 And never spare friend or foes,
 'Slay or be slain, is the slogan cold.
 You must struggle and slash and tear,
 For Business is Business, a fight for gold,
 Where all that you do is fair!"

"Business is Business," the Big Man said,
 "But it's something that's more, far more;
 For it makes sweet gardens of deserts dead,
 And cities it built now roar
 Where once the deer and the gray wolf ran
 From the pioneer's swift advance;
 Business is Magic that toils for man,
 Business is True Romance."

* From "Material Facts." (Applause.)

General Discussion.

President Burton: That is a fine paper. One that we should all read when it is printed. Mr. Luckett, who was to have led in the discussion of the paper, is not here. Mr. Alfred Pettit, a good brick salesman of Brooklyn, is in the audience and we would like to hear from him on the subject.

Mr. Pettit: The paper covers the subject so thoroughly, and in such an admirable fashion that I don't believe I can add anything to it. Surely the thanks of the Association is due Mr. Matthews.

President Burton: We will pass on to the next paper, "The Story of Paving Brick," by Mr. Hutchins of Wheeling, W. Va., which is to be illustrated, I believe, by a moving picture.

Will P. Blair, Cleveland, Ohio: Mr. President, I have a letter from Mr. Hutchins, in which he says he has the flu and, of course, cannot be here to read his paper. If it is agreeable, he would like to have me read his paper for him.

THE STORY OF PAVING BRICK.

R. T. Hutchins,

Vice-President Mack Manufacturing Co., Wheeling, W. Va.

Mr. Chairman and Gentlemen of the National Brick Manufacturers' Association:

Your secretary asked me to prepare a short paper taking as my subject, "The Story of Paving Brick."

When the word "paving brick" is mentioned, to my mind it refers to the size first manufactured for street paving purposes, which was then and is now known as "building brick

size," and for this reason, I will relate some facts leading up to and concerning the early history of the industry in Hancock County, West Virginia, where the first paving brick in the country were manufactured for commercial use, at a plant now operated by the Mack Manufacturing Company.

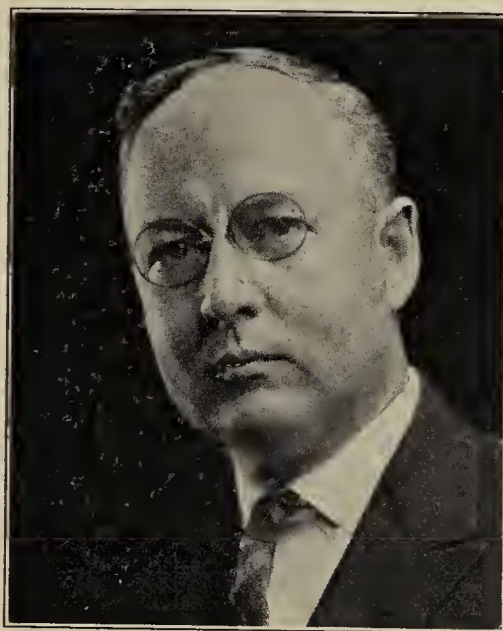
Hancock County, the most northern of the West Virginia Panhandle Counties, is one of the richest in minerals to be found in a state which excels in natural resources. Clay and coal are found in abundance, each coal vein usually serving as roof for the underlying clay vein.

The earliest white settlers in what is now Hancock County seem to have taken root in about 1790. Clearings appeared in virgin forests along the river but the settlement proceeded only slowly. As late as 1830 the number of settlers would hardly exceed fifty, who lived in possibly a dozen cabins, scattered over eight or ten miles.

Shortly after 1830 the region began to develop industrially by developing its mineral resources, especially its clay deposits.

The first clay mine was opened by John Gamble, close to New Cumberland, W. Va. The clay was transported in flat boats to Pittsburgh, Pa., a distance of approximately sixty miles, there to be manufactured into brick.

James S. Porter was the pioneer of the brick industry in



R. T. Hutchins, Wheeling, W. Va.

Hancock County, establishing a manufacturing plant near New Cumberland, and with two other plants that were constructed shortly after, practically supplied the whole demand, amounting to approximately 200,000 per year for several years. But as the iron trade along the river developed the demand grew and as early as 1844 we find five plants with a yearly production of 1,500,000 brick.

It was a prosperous, contented community, workers' all, owners and men alike. Their life, their work was hard, they were breaking new paths. We, of today, can hardly realize how modern improvements in machinery and how modern conveniences have changed and bettered our lives.

The making of brick in 1870 was practically all labor by hand. Our early brickmaking machinery consisted of a small engine and a set of rolls. A little later a wet pan was added, mixing the ground clay with water. All other work from the mining to the loading on boats was the hardest kind of physical labor. As the brick were being dried by the heat of the sun, favorable weather was a necessity. The actual brickmaking, therefore, was all done during the summertime, while the clay was mined and piled out through the winter. The miners loaded their clay on hand carts, which they themselves pulled out to the mouth of the mine, a couple of wooden stringers serving as rails, and dumped from platforms overhanging the clay piles.

After the clay was mined it was wheeled to the rolls, where

it was ground, shoveled back and reground until it was of sufficient fineness. Then, if the works were progressive enough, it was shoveled in the wet pan where water was mixed with the clay. The wet pans were built and run much like the grinding pans of today, the main difference being their solid bottoms. After the clay had been thoroughly mixed by the pan-rollers, it was shoveled out again and wheeled to the mud-pile. One day's grinding was then worked up by the moulders the next day—the moulds being emptied by the offbearers in the open yards, where the brick were dried. The making crew in those days consisted of the mud wheeler, the moulder and two offbearers. This crew made 3,500 brick—later the number was increased to 4,000 for a day's work. The number of crews at a works ranged from two to four.

After being dried, the brick were wheeled on barrows to the kilns and set. One setter and two wheelers constituted a crew, to take care of the output of two moulders. The kilns were the old-fashioned square, open top scove kilns. After a day's setting, the setters covered the top of the brick with bats. When the kiln was fired, the smoke and gases would work up through these bats. As the heat increased it became necessary to cut the draft in order to hold the heat in the kilns. This was done by carrying the ashes to the top of the kiln and covering the batting with them—making this covering ever thicker until the burn was finished. When the kiln was sufficiently cooled the ashes were shoveled off, the brick bats tossed over the sides, and the kiln was ready to be emptied by the drawers. Owing to the kind of kiln, and to the method of burning, the softer brick were always found on top, while the brick in the bottom, especially in the fire arches, would be overburned and distorted. It is worthy of notice that all the early part of a burn was done with wood, as late as the early nineties every brickyard had its cordwood pile, even after the nature of the kilns had been completely changed. And this in spite of the abundance of coal in the hills, and in spite of the fact that lumber was getting scarcer every year. And wood was also used in the finishing of a kiln, the belief persisting that only by mixing wood with the coal could the proper heat be attained.

In the spring of the year, when the melting snows raised the waters of the Ohio, came the harvest period for our brick-makers. First the keel boats, later barges to be towed by steamboats, were loaded and taken to the market. It was the usual custom for our pioneer brickmakers to sell and market a whole year's output in the spring—then came the yearly settling up day, or payday. The men were paid up in full practically only once a year, living the balance of the time on the credit extended them by the stores and on the products of their gardens. For in those days practically every family owned their home, their garden, their cow, their pigs and chickens.

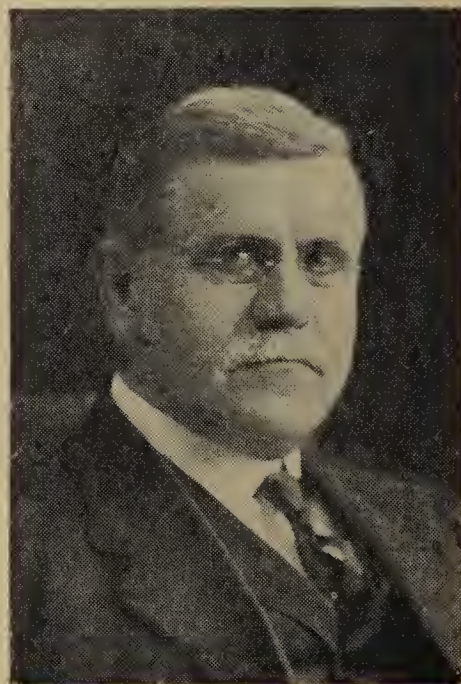
But a great change in the brickmaking industry was impending. With higher costs, greater competition, and decreasing prices, a larger production became a necessity. Machinery was put on the market to take the place of the old hand labor—the clay rolls were displaced by the grinding pans, the old-fashioned wet pan by the pug mill, the work of four or five moulders by the soft mud machines. In place of the laborious shoveling and wheeling of the clay, elevators were installed. All this labor saving machinery called for added boiler and engine power—additional boilers were installed and the engines increased in size and capacity. The intermittent production, relying on the drying of the brick by the heat of the sun, became a thing of the past. Large dry-houses were erected, with a system of flues and furnaces under the lower floor, by which they were heated. These dry-houses often had three floors—the heat on the upper floors being augmented by a system of steam heating pipes, which were fed from the boilers. Thus the open yards of the beginners passed away. Brick were made now continuously through the best part of the year. The severe winter weather still offered many drawbacks, interfering with the work of the outside men, especially the pan wheelers, steam and water pipes often froze, and in consequence the work through the winter season was frequently interrupted, but was not by any means impossible. All

these changes called for greatly increased crews, where formerly the same few men had mined the clay through the winter, marketed their brick in the spring, and made a yearly supply in the summer and early fall, there were now mining crews, making crews and firing and drawing crews working at the same time.

During the years from 1870 to 1890, the brick industry, which found its origin in a number of scattered primitive undertakings, had grown up into a commercial enterprise of large proportions. Of all the men who played a leading part in this period of growth and reorganization, Captain John Porter stands out preeminently. It was Captain John Porter, who first in America, realized the value of brick for paving purposes and who may truthfully be called the "Father of the Paving Brick Industry" in this country.

The first brick pavement laid in any city in America was at Charleston, West Virginia, where building brick were laid on Summers street in 1871. These, of course, were not to be compared with the hard burned vitrified brick used for paving purposes today, but nevertheless they served satisfactorily for thirty-eight years.

The brick were laid on a base of three inches of sand, one inch of tarred oak planks and a second three-inch layer of



Will P. Blair, Cleveland, Ohio.

sand. They were manufactured and sold by Captain Porter and transported by barge from New Cumberland, W. Va., to Charleston, W. Va., a distance of approximately 260 miles.

Even the soft mud brick of this early day stood the test of the years, but the real importance of paving brick dates from the adoption of the stiff mud machines. Thus the whole character of the product underwent a sudden change. The shape of the first paving brick approximately 2-inchx4-inchx8-inch, increased. Represses commenced to find their place in the brick works, used at first merely to insure a smooth, even brick of uniform size, next to furnish the brick or block, as the larger size is now called, with lugs and grooves, to allow the admission of a binding material in the pavement.

A number of years later, or about 1910, wire cut lug paving block, manufactured under a patent issued to Mr. Frank B. Dunn, came into general use and this block is today one of the standard types that is specified for paving streets and roads.

The moving picture film, "Brick—From Clay to Pavement," produced and edited by the United States Bureau of Public Roads, will now show modern manufacturing methods and proper construction of brick streets and roads.—(Applause).

General Discussion.

Mr. Blair: I notice by the program that I have been assigned to discuss this paper. If I could say in a few words

just what I would like to say, and give a clear expression to what I feel in regard to this thing, I would speak with a great deal of satisfaction, but I question whether I can make myself understood. We have heard from this platform this week some magnificent papers, the paper which Mr. Randall read a few moments ago by Mr. Matthews was a splendid paper of its kind, but if you will allow me the privilege, I have a little criticism of an innate character of all of the papers which have been offered. All of them I would characterize as being a little bit too academic. We have listened to magnificent papers of that sort for twenty years. They have suggested the meat of our trouble, but there has not been a man who has made clear to me, or perhaps to you, what lies at the bottom of these academic suggestions. Let me see if I can make myself plain right here as to what has inspired the vital suggestions which have been made, and then stop off at the point where something ought to be said. I want to know if there is a man in this audience who can go to a miscellaneous pile of brick of all kinds and pick up two or three brick and lay them on this table and say to Mr. Sibley, for instance, you want to build a foundation; you want to build a sewer; you want to build a warehouse; you want to build a sleeping



W. H. Kent, Chicago, Ill.

porch; you want to build a pig pen; you want to build a power house. Here is the brick for the one particular purpose mentioned. Not one man in this audience can do that service, and it is a service which ought to be rendered to the public by every brickmaker in this land. There is a demand from the architect that we be prepared to offer that kind of authentic, reliable information—the adaptation of the brick to the service and purpose for which it is best adapted.

We have in this country an institution known as the American Society for Testing Materials, and this matter was presented to the Common Brick Association by a resolution. You were represented at their convention at Atlantic City last June. All of the various clay products were represented, each with an Association, and we did not furnish that Society with that information which I hope will finally reach a culmination in this country, so every brickmaker can use it to his advantage against all materials in competition with brick by placing before the public information so they can use our product, best serving them by a proper adaptation of a particular brick for a particular use.

Why? Because with the ingenuity, with the trickery, with the sophistry, with the manipulation, and with the thing which

we are pleased sometimes to call gall, our cement competitors impede and obstruct our efforts to bring to you this very thing which we are hoping to put in the hands of the brick industry of this country.

I know that is getting a little outside of the paper, but it is a part of it. We are getting a picture of the past, why economic production has not proceeded as fast as we may flatter ourselves. We are far removed from the procedure outlined in this paper by Mr. Hutchins, yet how much wasted labor is found on the yards of every single one of you. Are you satisfied with the economy and the manner in which you are making your brick? I think we ought all of us get busy along these two things and thus fortify ourselves so we can meet and look every man in the face and say our particular brick is better adapted to this particular use for which it is made than any other material. With this and the economy of manufacture, we will advance the industry somewhere within the realization of our fondest hopes.

I could talk all day on this subject because I am full of it, but I am going to stop. There are going to be so many vital things here in the program to be handled I think the time should not be wasted, and if we can load ourselves up on things of real vital interest to the industry and carry it home and use it at the earliest possible day we will advance our industry as it ought to be advanced for the real economic welfare of the country.

This picture about to be shown is a picture which was taken under the auspices of the Bureau of Roads. I am not responsible, nor are the paving brick manufacturers responsible for everything shown in that picture. I would not want to have it said I endorse every step shown. I compliment these Government officials, for many of them I have the highest respect, some are as short-sighted as the rest of us. Some of the most progressive steps in the building of brick pavements in the country was overlooked in this picture which we regret. Now, we are ready for the picture.

Elisha K. Kane, Kushequa, Pa.: I wish Mr. Blair would express his opinion of the way that roller came down and rested on each row of brick before going on to the next.

Mr. Blair: If a man would stop to reason for a minute. The roller sent down in that manner, make the brick rise on edge, and a little of the sand beneath the edge of the brick is redistributed. If they had sent that roller down diagonally or transversely across the road it would not have happened. You noticed in the second picture the man was packing the sand uniformly. I suppose in that particular feature of road construction, 75 per cent of the brick roads were built in this country back years ago when we almost exclusively conformed to that method of construction. We threw the sand down and scraped it off, put a templet on it and smoothed the top off and maybe intervening rolled it once. You have got to roll it once, twice or three times and make it uniform and hard and then lay the brick on that. Seventy-five per cent of the roads were built without the advantage of this uniform support.

President Burton: Is there any further discussion on this paper? If not, we will hear from W. H. Kent of the Weller Mfg. Co., Chicago, who has a paper on "The Handling of Coal and Coke About the Brick Plant."

HANDLING OF COAL AND COKE AT THE BRICK PLANT.

W. H. Kent, Chicago, Ill.

Mr. President and Gentlemen:

The subject assigned to me, "The Handling of Coal and Coke at the Brick Plant," I realize, of course, is of divided importance to this assemblage as not all brick plants are today

burning coal in their kilns, but those who are, and have not already solved their problem of mechanical storage and handling are confronted with an item of mounting cost due to labor shortage and labor demands, which is becoming a serious item of expense.

All comparison of labor costs is today, and rightly so, based on conditions prevailing prior to the late war. While the late war did not change all things, yet it can be blamed largely for the labor situation as we know it today. Prior to the war, labor was reasonably plentiful and we might say also reasonable in its demands. Coal and coke received on a siding at the brick plant could be handled by the strong-backed man at a nominal cost; today quite a different alignment as to labor supply and demand confronts us in all phases of production. The scarcity of labor is at this time considered to be rather acute, but, my friends, it is my humble judgment that with the general prosperity spreading over the country at this time, and especially coupled with the abnormal activity in the building trades, we have not yet reached the peak of labor shortage.

It is my purpose, in the brief time allotted to me, to point out a possible way of making the grade seem less steep as far as the handling of coal and coke at a brick plant is concerned, which is to say, eliminate as far as possible the handling of coal and coke by hand and do it mechanically.

Right here let me say that the problem of handling material mechanically, or by means of labor saving devices, is not peculiar to any one industry, as is evidenced by the inquiries received by us ranging from the handling of poker chips by the manufacturers thereof to large, bulky items, such as automobile chassis and bodies as well as furniture and pianos. In a great many cases inquirers do not feel that there is a way of cutting down their cost by installing mechanical handling equipment, but they do want to dispense with the number of men required to perform a certain task, due to difficulty of obtaining such men. In such cases they realize that the installation is going to cost them as much, possibly more than the saving on labor. Those, of course, are exceptional cases.

The main reason for installing labor saving devices, or mechanical material handling equipment, is not only to cut down the number of men required to perform a certain operation, but to reduce overhead and speed up production. Naturally, where one or more progressive firms install machinery or equipment which cuts down their cost, it makes it almost necessary for the competitor to do likewise in order to meet competition. Coupled with the present labor shortage is the always attending menace of being unable to operate because of such shortage. Today coal and coke is received at a large number of the brick plants, unloaded by hand onto the ground alongside of the car whence it is shoveled into wheelbarrows, rolled to the kiln opening where it is to be used, dumped on the ground, and then shoveled into the kiln, three separate and distinct handlings which add excessively to the cost per ton, even though labor can be obtained to do the work at a reasonable wage. Added to that, a great deal of dirt and foreign substance is shoveled into the kiln, which should not be and which adds to the difficulty of burning, also the making of clinkers in the fire box.

While all plants are not so situated that mechanical means can be used to eliminate some of the labor above mentioned, yet it is possible in the majority of plants to do so. Coal and coke might be received in hopper bottom cars, discharged directly into a receiving pit, where it could be fed to a conveyor and conveyed to strong tanks; from the tanks the coal could be fed to industrial cars which could be shunted directly to the kiln opening. This is a simple statement, and it seems perfectly easy of accomplishment. So it is, but, naturally, the question of cost of such an installation arises. In answer thereto I can say that based on the present method of handling in most cases, returns, after figuring interest on investment, depreciation, etc., would be very pleasing, I am sure. Just what it might be, would of course depend entirely on the individual installation.

What has been accomplished along the lines of material handling in other industries, particularly the handling of coal, might be of interest.

Mr. A. B. Cahill, partner of M. J. Cahill & Co., Boston, Mass., says: "Our Weller Bucket Elevator has proved the finest possible system of handling our coal. With this equipment we unload a 50-ton car in less than two hours. In the past month and a half it has handled 50 cars of coal, and on an average it will handle about 12,000 tons or 240 cars a year.

"Coal arrives at our yards in hopper bottom cars, from which it is dropped into a hopper beneath the tracks. From the hopper it is thrown by a rotary feeder into a boot—and the Weller Buckets turn into this boot, take the coal out and then elevate it about 35-ft. to a trough from which it goes into the various bins through five chutes. The Weller elevator causes no breakage of coal and we handle nut, egg, stove soft and pea coal.

"Formerly we used a portable belt conveyor, this method necessitated loading out of wagons by hand and required trimming at the bin, both running into considerable expense. In fact, our figures show a cost of \$19.20 a car or .38 2/5c per ton



Method of Handling Coal, M. J. Cahill & Co., Boston, Mass.

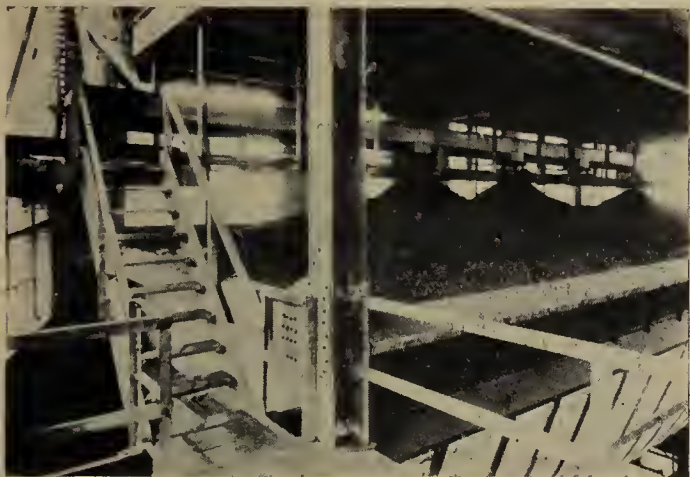
for handling by the belt conveyor, while with our Weller System our cost is only \$5.00 a car or 10 cents per ton—a saving each year as the result of the Weller installation of \$5,408.00. The system is very economical to operate."

The Bethlehem Steel Co., Sparrows Point, Md., says: "In the by-product coke oven plant the coal is charged into the coke ovens by a coal larry, and leveled by a leveler which is attached to coke pushers. An average of 30 tons of the fine coal a day is spilled onto the coke oven operating platforms, etc. It was the practice to pass this coal through the entire conveying process again, or return it by cars to the coal dumping hoppers. Both methods were expensive and unsatisfactory.

"In 1920 this problem was solved by installing a Weller-Made Double Chain Bucket Elevator driven by a 10-h. p. Motor. Now the spilled coal is pushed off the platforms into a hopper, carried on the coke pusher and is then dumped into a track hopper from which the elevator raises it and discharges it directly into the larry bins.

"Formerly the spilled coal was swept up and wheeled away by hand—a laborious and expensive process, requiring at least four men. Now one man handles the Weller type elevator in addition to other duties, effecting a net saving greater than the wages of three men. This saving will pay for the original cost of the elevator in less than a year. The economic advantage of raising the coal directly to the larry bins will be appreciated in plants of this type.

"The purchase of the Weller type elevator was influenced by the low power consumption and substantial construction. In nearly two years it has given no trouble."



Storing and Handling Coal at Plant of Sibley, Lindsay & Curr, Rochester, N. Y.



Chicago & Alton Railway Co.'s Method of Handling and Elevating Coal, Chicago.

Mr. G. A. Vinton, Chief Engineer of Sibley, Lindsey & Curr, Rochester, N. Y., made this statement to one of our investigators:

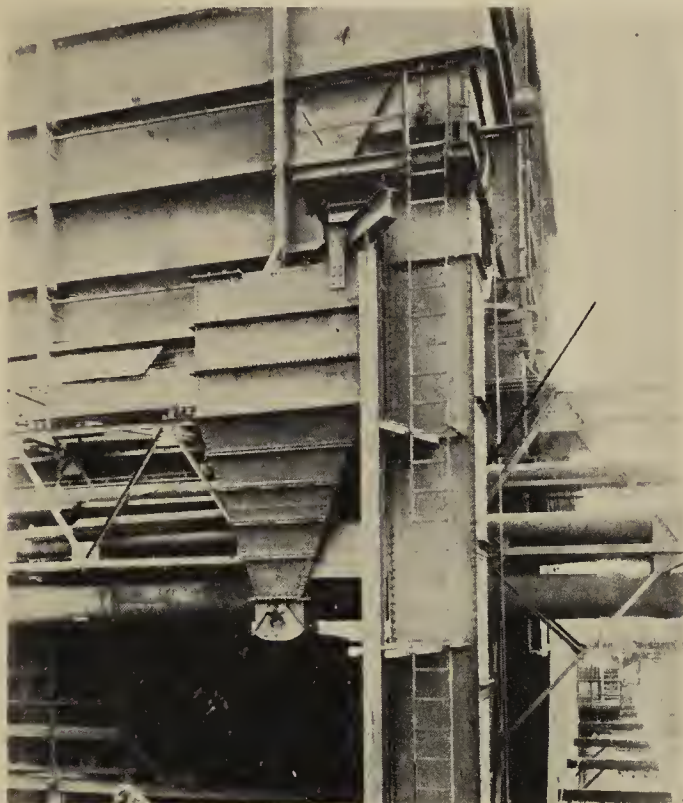
"When it came to a decision as to what method we would use for mechanically feeding coal to our boilers we were convinced after looking over other installations that a Weller Bucket Elevator and Screw Conveyor would give us exactly what we wanted.

"Now coal is hoisted to fill from our loading bin by the Weller Bucket Elevator to a 14-inch Screw Conveyor, measuring 40-ft. in length, which distributes it in our 400-ton overhead storage bunker.

"This installation was completed April 1st, and without trying out or limbering it up, we handled 403 tons of coal in just two days, working 8 hours daily.

"This equipment saves over \$5,000 yearly in wages, one fireman can now do the work."

We recently installed at the Chicago & Alton R. R. Company's Freight House, a coal handling system. This is a combination locomotive and boiler coaling station. Coal is received in hopper-bottom cars, dumped into a track hopper from which it is fed to a Weller Bucket Elevator, which carries



Bethlehem Steel Co.'s Coal Elevator and Conveyor, Sparrow's Point, Md.



A Complete Coal Handling System, Camp Brick Co., Canton, Ohio.

it to the top of the building where it is distributed into a 100-ton bin.

Coal is then fed to the locomotive or boiler room as required, from the storage bin by gravity. This does away with hand labor, as all that is necessary when coal is required is for the fireman to pull a lever which opens the bin gate.

Here is one on clay handling:

Mr. P. R. Berryman, Secy. & Treas., The Mutual Potteries Co., Trenton, N. J., made this statement to our investigator:

"In the manufacture of bath room fixtures and other pottery products, clay naturally plays a mighty important part. Therefore the method for handling that clay is worth some

thought, particularly if some of the clay is too disintegrated, as it must be in manufacturing a better product.

"Our method has worked out very satisfactorily through the use of Weller Spiral Screw Conveyors and Bucket Elevators. We use both English and domestic clays, which are unloaded from box cars into hoppers located beneath the loading platform from which the clay is taken by Weller Spiral Conveyors. Each conveyor is about 60-ft. long and feeds a bin the same length, holding 5 cars or about 150 tons. Weller Conveyors enable us to disintegrate the clay without re-handling it.

"Weller equipment enables us to use longer bins and makes greater storage area by piling right up to the ceiling. The large bin capacity enables us to have the clay shipped in larger quantities, insuring greater uniformity. This saves changing our proportions and cuts down our losses from that source.

"Without this equipment two more men per car would be required to handle the clay. This man saving alone soon pays for the equipment. The power cost of operating this equipment is very slight and it is a great convenience and a profitable investment."

No. 5—Camp Brick Co., Canton, Ohio—(1916).

A complete coal handling system.

"Coal is received in drop bottom cars which deliver the coal into steel track hopper. The bottom of this hopper is fitted with an apron feeder which carries the coal over and delivers it to a bucket elevator. This elevator is of the con-



Storage Bin and Material Handling Equipment, Byrne Bros., Evanston, Ill.

tinuous bucket type so arranged as to elevate the coal a certain height and then convey it across to the distributing conveyor. In the conveying operation the coal is scraped over a bar grizzly, removing fine coal which is spouted to the boiler room, while the clean lump coal passes into the bins.

"One man can easily handle the entire operation with time to spare. The power required is about 10 h. p. and an average car may be passed into storage in about two hours.

No. 6—An enlarged view of the bottom of bins showing wagon receiving from bin.

Board of Public Works, Hannibal, Mo.

No. 7—This is a view of bucket elevator head with spouts leading to two coal bins and one to belt conveyor which distributes the coal over the bins.

No. 8—Another view showing the tripper by which the coal is distributed to the different bins from the belt conveyor.

No. 9—A 100-yard steel bin installed at Evanston, Ill., for Byrne Bros. (large contractors). Material is stored in bin and as needed is delivered to trucks on industrial cars.

No. 10—An installation at the Quincy Mining Co., Hancock, Michigan, showing a Weller Weigh Larry which receives coal from the bunkers and delivers it to the boilers.

No. 11—Coal handling, Village of Hibbing, Minn.

This is a view of Elevator Heads, and spouts. Coal is delivered to bunkers and distributed to boilers as required.

No. 12—Coal Handling System, Lima Locomotive Works, Lima, Ohio.

An interior view showing coal bunker with gates and spouts. Boiler had not been installed but the coal handling system is complete.

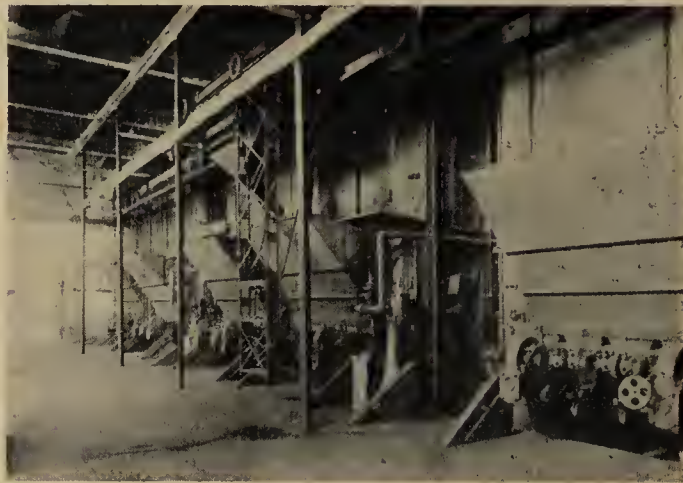
No. 13—Another view of Lima Locomotive Works, showing head of bucket elevator feeding to Belt Conveyor, which distributes to bunkers just shown.

No. 14—Coaling Station, Sinclair Refining Co., East Chicago, Illinois.

This picture shows the structural steel work which will house the belt conveyor that carries the coal to the bins.

No. 15—Another view of Sinclair Refining Co., showing the building complete and the conveyor housed in.

No. 16—A Weller installation under construction, showing belt conveyor rolls which will handle the material and carry it into storage.



Weight Larry and Coal Handling Equipment, Quincy Mining Co., Hancock, Mich.



Coal Conveying Equipment, Lima Locomotive Works, Lima, Ohio.

What has been said above and what has been shown only briefly touches the subject.

The question of handling material mechanically is being studied in all industries. While the problems differ, yet in the main where coal, coke, sand, clay, etc., are to be handled the same principles of engineering and similar equipment are required.

General Discussion.

President Burton: I believe the discussion of this paper was to have been opened by our First Vice-President Joe Post.

Secretary Randall: Mr. Post has a simplified and economical way of handling his coal, having adapted a portable hoist.

Jotham Post: Since I have been burning coal there has been a railroad strike or coal strike, or something of that sort, to hinder and bother us much of the time and we have

been darned glad to handle it any way we could get it. We have a great deal of coke come by truck. Can buy it better at retail. The soft coal I have been storing in my plant. It is dropped from the bottom of the hopper cars, and we have a conveyor which will handle about a ton. The trouble is to get the soft coal to come down out of the car into the elevators, but I think there are others here who can give a better idea of handling coal. We have another elevator where we hoist the coal up and then drop it down. It is impossible to get good men to handle the coal as we used to handle it.

President Burton: What is next on the program Mr. Secretary?

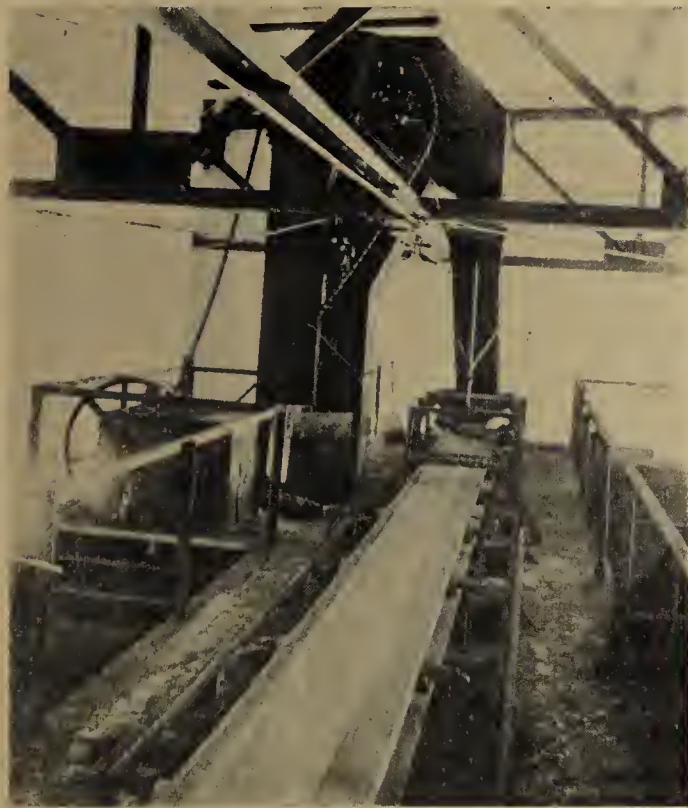
Secretary Randall: The next is a paper by C. N. Johnson, of the Westinghouse Electric & Mfg. Co., of East Pittsburgh, Pa., on "An Electrically Equipped Brick Plant."

AN ELECTRICALLY OPERATED BRICK PLANT

C. N. Johnson, East Pittsburgh, Pa.

Mr. President and Gentlemen of the Convention:

Regardless of the class of goods which we manufacture, we are all interested in obtaining a maximum output at the



Handling Coal at Lima Locomotive Works, Lima, Ohio.

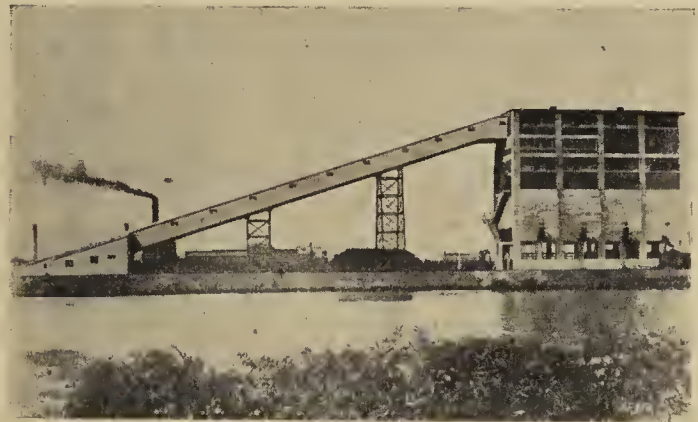
lowest unit cost with a minimum of manual labor. Many of you from your personal experience will bear me out in my statement that electricity has proven a willing and efficient servant in your labor toward these ends. In many ways, we have found it possible to increase production by the proper application of electric motor drives. From the standpoint of unit cost of production, we all know that the power cost is only a relatively small item in the total cost of brick, so that the total saving may not be large, yet by the use of electric motors and purchased power, allowing the manufacturers to do away with the maintenance of expensive power plants, it has been possible for the managers to put more time and thought into the actual manufacture of bricks rather than the manufacture of power. The flexibility of arrangement made possible by the use of individual motor drive on the various machines and conveyors insures a minimum of labor for handling both the raw material and the finished product.

It is not my desire this afternoon to bring to you any extensive series of arguments for the use of electric drive as I feel that these arguments have been very ably presented to

you in years past as witnessed by the striking increase in the use of electricity in the manufacture of brick. I do feel, however, that there are certain fundamentals in connection with the application of electricity that we should not lose sight of and which will always bear repeating. Like your own great industry, the electrical art progresses from year to year and I trust that I may be able to present a few new ideas which will be useful to you in your business.

I would first like to present to you a few facts for your consideration in connection with the construction and operation of alternating current motors and the control for these motors. The simplest type of motor is the so-called squirrel cage motor in which the only wearing parts are the bearings. For applications of small horsepower, this type of motor is almost universally used in your various processes. Its simplicity and sturdiness recommends it for use wherever possible. It has certain limitations, the one which usually results in its elimination for another type of motor is the fact that its starting effort is limited.

Where more starting torque is required, such as would be the case for starting pug mills and auger brick machines, another type of motor is used, commonly known as the wound rotor motor. The wound rotor type of motor will furnish a maximum of starting torque with a minimum of power drawn from the line at starting and is therefore very desirable, particularly in the larger types. An alternative to the use of the wound rotor motor with direct drive to the machine is the use of the squirrel cage type of motor with some type of clutch interposed between the motor and machine. With a satisfac-



Power House and Coal Handling System, Sinclair Refining Co.

tory type of clutch, there is no reason why this substitution should not be made.

Another type of alternating current motor with which you perhaps are not so familiar but which has come very much into demand in the last few years, is the so-called synchronous motor. It takes its name from the fact that the speed at which the motor operates is fixed definitely by the frequency of the alternating current supply, the speed of the motor being in synchronism with the speed of the generator supplying the power. This, of course, means that there is no variation in the motor speed between no load and full load on the motor. In a few moments, I will show you a few pictures illustrating the details of construction of this motor. The winding of the stationary member is very similar to the windings of the other two types of motor which I have just mentioned. The rotating part, however, is made up of fixed poles, excitation for which is supplied from a separate direct current source. Recent refinement in the art of design of this motor has brought the starting characteristic very nearly to those of the squirrel cage type of motor and it is partly on account of this that the application has become more general. For most applications in a brick plant, it would be desirable, however, to use some type of clutch between the motor and driven load. For motors of 100 h.p. and above, this type is particularly suitable, especially where power is purchased from a Central Station Company. The improvement in electrical character-

istics of the load so far as the power company is concerned often warrants the granting of a more favorable rate by the power company.

Regarding the development in the way of control for use with the various motors, the tendency each year is more toward the use of automatic controllers. Whereas hand starters have been perfected to a point where they are convenient to operate and where they furnish adequate protection to the motor equipment, nevertheless, there are many features of the automatic control which tend toward more satisfactory operation.

With the automatic controller, the functioning of the control equipment is entirely removed from the control of the operator except as he manipulates the master controller or push button station. This is particularly desirable in plants where the electrical equipment is operated by unskilled labor. The main controller may be placed at a point convenient to the motor and out of the way of other operations, and the small master controller or push button station may be located at a point convenient to the operator of the machine. It is possible also to install more than one control station, this being particularly desirable in the case of "stop" stations which may be located at convenient points around the machine allowing the apparatus to be stopped quickly in case of accident.

Another feature which has come very much to the fore in the past two years is the use of electricity for heating in industrial processes. The more we study this problem, the more places we find where electric heat may be used to advantage. One point which must be kept in mind in any attempt to use the electric current for this purpose is the fact that experience has shown that it is very seldom satisfactory to substitute some form of electric heater in place of any other type of heater without carefully studying the problem and making special provisions to conserve energy as much as possible. Electric heat may be concentrated at the point where the work is to be done and when the application is properly made, a greater part of the heat will be doing useful work. Of particular interest to all of us here is the successful heating of brick press dies and moulds.

We will have at this time a number of slides illustrating various types of equipment and its application to the brick industry.—(Applause).

General Discussion.

President Burton: That was a very good paper, and I am sure we thank Mr. Johnson for coming to us. Mr. Terry, have you anything to say to us in connection with the paper.

Jay Terry, Kingston, N. Y.: I really know very little about this question. We are operating with steam. We are operating our brick machines, making about 100,000 brick. Using motors to operate overhead tramway with an automatic stop. We are not using the button to stop with. We are getting very good satisfaction.

Secretary Randall: We have some slides of a different character. We were in hopes Mr. Walter Simon, of Los Angeles, would be here to tell you something about his wonderful plan which they say is the largest building brick plant in the world, and some who have seen it are ready to agree with him. He has been here, as most of you know, but his wife was anxious to get up into Canada to see her mother, who is quite ill, so they felt obliged to leave last evening. I am sure most of you will be glad to see at least a few views of Mr. Simon's plant.

(Some fine views of the immense plant of the Simon's Brick Company at Los Angeles was shown.)

Secretary Randall: I did not realize these other slides were with this bunch. These are pictures of the famous Chinese wall, many miles of which is still standing in about the same condition as when built hundreds, yes, thousands of years ago. In some places the brick have been carted away of late years and used for building purposes. It is a notable example of the durability of brick. This brings us to the end of our program for today, but we might get ex-president C. P. Mayer to tell us something of his trip to Europe last fall. I heard a good story not long ago. A gentleman had asked to be permitted to talk. He was a good speaker,

but never knew when to stop. So the Committee in charge gave him a piece of ice and said to him, "Now, go ahead, you can talk as long as you can hold this piece of ice in your hand." (Laughter.)

INNOCENTS ABROAD.

C. P. Mayer: Let's see, it is now ten minutes after four and when I get started to talk on my European trip there is no telling how long I will talk. I haven't any ice to hold. I want to tell you exactly some of the things I saw and then I want you to interrogate me as to what part of the trip you want explained. My investigations covered three months, and I am sure I could hold you here with an interesting talk for a whole day and I would not have told you all I really saw which was strange to me. If I am rightly informed, only two per cent of the American people ever traveled in Europe, so ninety-eight per cent would be interested.

Trip: This trip began as a health trip. The doctor prescribed that I get away from business trials and tribulations. At first I went to Atlantic City, and I took my trouble with me and did not improve. The doctor said, "That is not the way to go for a rest. We are going to send you on an ocean trip," so we started. The first stop we made was at Coxhaven, in Germany. I want to tell you the things I ran across. If there is anything special you want me to tell you, you can ask questions.

President Burton: How does the coal compare with the quality of coal in the United States?

Mr. Mayer: I did not go into the coal investigation very deeply. In Germany, and the same thing is true in Holland, they have a peat, a vegetable compound of seaweed, which has grown in the swamps on the low lands along the ocean for hundreds and thousands of years and decayed there until it has made a thick bed of peat, and they cut it into blocks with sharp knives, much the size of our paving block. These are stacked up in rows and you will see patches of ten or twenty acres, as our automobiles or trains ran along in some localities for twenty minutes through nothing but peat fields. Many of them are open to the weather. Others are covered with boards or thatched roofs. That is the principal fuel used in some sections of Germany and Holland.

In some localities, they burn brick with this same fuel. In that instance, they have to dry it. To use it at any time, it must be dried. That is the kind of fuel I saw in many localities while going through Germany and Holland.

Brick Factories: Of course, I looked at the brick yards. The Belgian brickmakers have gone into the devastated war districts of France to manufacture by a soft mud process and, if I saw one, I saw fifty of these brick plants. They have a hand power machine with which they mould the brick. Much of Belgium and France is underlaid with white marl formation with about two to six feet of sub-soil or clay. They make their brick out of the clay about the same as we do in America by the soft mud process and many of the brick are set in rows and dried in the open. In some places, they have crude dryers and after the brick are dry they set them in piles or old-fashioned kilns. After getting the brick stacked to about six or eight feet high, they plaster the outside; then fires are started while they keep on piling the brick on top while the fires are burning under their feet. If you would tell that to some American brickmakers, they would think it was a hoax. How they stand the smoke and gas while hacking the brick on the burning kilns is a puzzle to me. The fuel is a mixture of bituminous coke and fine slack. It is crushed fine. It is only partly coked. They spread some of this coke over the brick and pat it down with a shovel and then the next layer of brick is set on top of the coke and that is the way they part dry and burn their kilns while setting. I stopped at a number of plants and, I suppose, I saw fifty of them in the devastated district of France. I also saw them burning brick with peat; their same up-to-date continuous brick plants inland.

Brick Roads: My friend, Randall, had admonished me I must come home with some information on the hundred year old brick roads in Holland. Consequently, when we got to Holland, I began to look around. I have not time to tell you all the things I saw in Holland, but I want to tell you some of them. Holland is a cheese manufacturing country. Nearly the

whole nation is given over to cheese making and fishing. I did not go into any part of Holland where cheese making did not rank first among the industries. Holland is only about one-third the size of Pennsylvania. One-third of Holland has been recovered from the ocean. They have built dykes and pump the water into the ocean out over the dykes. Big windmills that develop two hundred horse-power are seen everywhere, sometimes twenty of them in a row. They are used to pump the water into the ocean and that is the way they keep the land dry. The Government of Holland owns all the public utilities—the railroads, canals, streets, gas, water and power plants. Almost every city in Holland has a dam to its name. They have one in particular called Markendam which is peculiar. A small railroad runs out through the town to the villages. The law requires that the conductor walk through the town with a red flag ahead of the train.

Secretary Randall: Amsterdam, Rotterdam and Cofferdam. (Laughter.)

Mr. Mayer: Yes, and several other kinds of Dams.

Speaking About Amsterdam: We live in our country so long that we get used to what we see and know and don't think anything about it; and when you see something in Europe that is strange, it strikes one very peculiar. I had about twenty pounds of pictures and albums, and if I had them here, you would be very much interested. Among the other things I picked up was a map of Amsterdam and the blue you see in this map (exhibiting a map of Amsterdam) is canals, lakes, lagoons, etc. To my amazement, I found that Amsterdam was composed of ninety-six islands. Can you conceive living in a city composed of ninety-six islands, all connected by bridges over water? They are now undertaking to recover land from the ocean which will take seventy-four years to build and pump out the water. When this land recovering job is finished, the area of Holland will be increased nearly fifty per cent. From this statement, you can see what it will cost to enlarge Holland. In most of Holland, you will not see any fences but you will see plenty of water, ditches, which separates the different properties and carries the water to the pump.

Cheese Making in Holland: Just as many acres of land that a man owns, he owns just so many cows. How these cows have been educated, I do not know, but a cow never goes off its own grazing spot. They will not cross the water ditches. These water ditches run from six feet wide to the width that will carry a canal boat, which can be seen everywhere. Seventy-five per cent of the freight in Holland is carried in these canal boats. The farming districts are peculiar, they have only one building. In this building lives the family, the cows, horses, hogs, chickens and rabbits. These houses are about fifty or sixty feet square, about ten feet high to corner. The living room, where the family lives is in the front. On one side the cows live, and on the other side the pigs and chickens. There is a hay loft under the roof and there they stack their fodder for their cattle, and every farmer is expected to carry two years' supply of fodder, so that they will not meet with famine. I suppose you wonder how people live in a cow stable and with chickens and hogs.

When you go down to these villages along the coast where the fishermen live the people look very strange. They wear all kinds of dress in rainbow colors. While on our way, we stopped at a farmhouse to learn how they manufacture cheese. This particular building was fixed up for visitors and you had to give the "haus frau" a tip. They had their living room in the front and the cow stable on the side and we were asked to look how nice and clean everything was kept. The manure basin is their measure of their bank account and treasure. Every kind of manure goes into these manure bins, water is poured into it and it is stirred and turned out finally into a liquid and hauled out and sprayed on the farm. Here, in this particular place, was the cow stalls on one side and back of the cows was the cheese factory. Among a lot of other things in the cow stable was a lot of ropes hanging from the ceiling. I looked at them and could not conceive what they were for, so I asked our guide. He said, "The ropes are to tie up the cows' tails so they won't get dirty." They did not say anything about the cows living so near the cheese factory. They had lovely slabs of white lumber on which they put the cheese to dry with weights and as the cheese dries out the weights slip down. The pineapple-shaped cheese you see on the market is made there back of the cow stalls in the same room, not too distant from the cows.

After we came out from this show place, I said, "Take us

to that house over there," (pointing to a house not far away) and the guide tried to tell me he did not want to take me over there, or could not take me, but I told the driver I wanted to go over there to the house in the field, so we were driven where the guide did not want us to go. I said, "Tell this woman I want to go through her house," and I took from my pocket a piece of money and handed it to the woman and she said she was not ready. I told her I wanted to see through her house as it was and it was the worst looking house you could imagine. I tell you we did not eat any cheese for a few days after that. (Laughter.) But, after a few days, we ate cheese again. It was really strange to see these things as we passed from one side of the district to the other. You will see many strange things in each district.

Wind Mills: To see the wind mills running in the fields, you would ask yourself why they were there, but upon going over to them, there you will find ditches running full of water and the windmills at work pushing the water along in the ditches to the larger wind mills, which pump the water into the ocean. The ground is so level that you can look as far as your eyes can see and you will see nothing but the blue sky above and the green grass below and finally they come together in the distance. The cows in the green fields are spotted black and white and are unusually large (Holsteins) and actually, we stopped our automobile to look at the cows. There were thousands of cows in sight and we looked so far in the distance that these large cows looked like little pigs or rabbits. This is a picture of Holland.

Mr. Lucktenburg: How about the Holland gin? (Laughter.)

Mr. Mayer: The last examination the doctor made of me, he told me to be careful what I ate and drank. All my life I had heard about the good beer of Germany, and I told the doctor I wanted to drink some of that beer. He said, "You leave that good beer alone." So, I was over there with orders not to drink. I did drink a time or two, but not to extreme. What I did not do my partner made up for. I want to tell you I always understood Germany was a drinking nation, and I did not find that good beer in Germany. There were only one or two good beers that I found in Germany, Holland, Belgium and France. The local beer we found in Germany was nothing but slop which we did not often drink. Germany is not a beer-drinking nation, but a wine-drinking nation. You will go through the streets and find places crowded with people drinking wine and you will see from one to six bottles on the tables with three or four people sitting around each table. I do not know if it was different before the war, but that is the way it is found now. You may find some beer-drinking, but it is in the minority. What they do to you over there is this: If you go into a restaurant and drink a bottle of wine with your dinner, you pay the ordinary price, but if you do not drink a bottle of wine with your dinner, you are charged forty per cent additional on your bill. They penalize you for not drinking wine and that is universal. I always got penalized and it did not down very well. But my partner, who wanted to reform all of Europe, got off cheap. Without exception, or at least one or two, we did not find any fruit. At the table, they did not serve water, pepper, bread or butter. These things you had to order extra and it borders on extravagance. In Germany you do not find any white bread except in the traveled zones, and you know American people are the biggest fools on earth. When the German people see an American coming they want to do this and that and the other thing for him, and it is all because of the tips the Americans give. If you want to be in the push, you have to tip. In these traveled zones only will you find white bread. Away from the traveled zones you find dark bread instead.

Bread of Germany: In one of the districts we traveled by the Rhine, we found a baker who baked more bread per day than we make paving blocks and the bread was about the size of a paving block and was baked on pallets on dryer cars and looked on the outside as though it had been rolled in the street gutter. A person is allowed but one loaf of this bread per day and if they want white bread, they receive it only upon order of Burgomeister and pay an outrageous price for it.

An Expensive Book: This is not only true of bread, but is true of almost everything you purchase in Germany. Germany seems sore against the balance of the world. In Cologne, I found a song book I wanted. I have some German neighbors who once in a while sing some German songs, usually when they get a few under their belts. After they sing one verse,

with the balance of the song forgotten, they just try to hum the balance, so I found this German song book with about eight hundred German songs in it with the music, so I thought the next time these neighbors stall on a song that they have forgotten the words of, I could furnish a book with the necessary words and music. They charged me eight hundred marks for this book. At the rate of exchange at that time; it amounted to about 66 cents. I thought that was cheap for a book of that kind. I carried it back with me to Berlin and there I learned I could not take the book out of Germany without an exporter's license. I went over to the Inspector's office and they charged me eight thousand marks or \$6.66 for a license to take out of Germany a book which originally had cost me 66 cents. I carried that book over the line and after a rigid examination, I got through. I later sent the book home by American express which cost me \$5.53, the charges on the American side for tariff and storage. That brought the price of the book to \$20.83. You bet, I will make those German neighbors sing to beat the band upon first opportunity.

Binocular Glass: I also bought a Zatz 8x40 binocular glass in Germany. The merchant from whom I purchased it told me I could carry the glass out as a personal possession. It was a heavy glass and I hung it over my shoulder. When we crossed the line into Holland, the German inspector asked me what I had. I answered, "A field glass," and showed it to him. Then he told me I could not take it out of the country and gave me a receipt for same. It had cost me \$32.00 in Germany and he told me the duty and tariff would cost more and then there was \$20.00 in addition for an exporter's license, and I suppose the American Express Company will add a charge so that the glass will cost me about \$100.00, if I ever get it.

The Brick Roads of Holland: I got off the track a little. I wanted to tell you about the brick roads. We investigated the brick roads of Holland as Mr. Randall had ordered. We found many of them in Germany and Holland. There is a silt which has accumulated on the land along the coast, which makes a good brick. It resembles the Hartford brick in the Eastern States. I think it would make a good paving brick if they had the proper means of manufacturing it. The brick they use on the roads are taken from the arches of the kilns and are crooked and over-burned. The brick are small, about $1\frac{1}{4} \times 4 \times 8$ inches. The roads we investigated were in the town of Edam, where Edam cheese is made and where it gets its name.

Funny Trains: They have such funny little trains over there. When the train arrives at a village, the conductor gets off and walks in front of the engine, and the train follows him—that is how fast they travel—the conductor becomes the speed limit.

Roads: We found one particular road which looked worn. When one of these little brick wear out or disintegrate by freezing the brick are so small that the space between is only about one and one-quarter inch, and so it is but little affected by the high-wheeled wagons. They do not have truck traffic like we do in the United States and the traffic is not heavy. Holland is really a rich nation; but still they have a heavy tax to pay. That is because they had 280,000 deserters from Germany to keep during the war. We went to the Inspector and to the Magistrate to ask about the street, to learn how old it was, but they could not find records of when the streets were built. Finally we found someone who knew an old man eighty-two years old and who they thought could tell us the age of the street. We asked him. He stated his father told him that he (his father), when making his First Communion, that a relative of his, a young girl, also making her First Communion, while crossing the plank, had fallen off the plank and had broken her arm. The plank was laid across the street because they were then laying the brick, so he figured the brick was about one hundred twenty-eight years old. I saw several streets one hundred years old, as they were common. These roads are usually built on top of the dykes along the Zeider Zee and canals. If we would put our traffic on these roads, they would be hammered into smithereens in a few years. In Germany, Holland, Belgium and France, I would say, that one-fourth of the traffic which passes over the streets or roads, is pulled by women, or women and boys, or dogs, all on high-wheeled carts.

The women in this country ought to thank God they are in America, and I think American citizens should thank God at least once a day that they are Americans and live in America. At least 60 per cent of the work done in Europe

on the farms is done by the women and I have seen them on their knees, six in a row, with large hooks in their hands, hooking out potatoes and the small children following behind filling their baskets. One can see all the hay-making and weeding done by women. It is heavy work for women and the women of this country should thank God that they don't have to live in those countries. Many women work in the mines in the Ruhr district.

The Germans' Idea: We investigated the question of how they feel towards their present government and the question of classes. When in Hamburg, I went to church and that got me in wrong. It seemed to me that I was in church about one-half hour, and in that time they had taken up four collections in that church. Outside the door, they button-holed me and told me they were taking up a collection for starving children. I told them I was an American and talked American and I asked them if they had anyone there who could talk English. They brought a professor of a school and among the first things he said was, "Have you any old automobile tires which you will give us for nothing?" I said I would send him a ship load if he would pay the freight.

Conditions at School: He took me over to a school house where there were about four hundred children and none of them had good shoes. They all had a piece of rubber tire nailed on for soles. Some of their feet looked as though they were shaped to walk on a hillside. Leather in Germany is almost out of existence. Any leather article costs about three times as much as it does here. They haven't any leather and can't get any money to buy it. France took their horses and cows and everything that produces leather. Shoes cost \$18.00 and \$20.00 a pair.

I met a lady in one town who said she got 525 marks for a month's pay; seventy-five marks were kept out of that for insurance and sick benefits, leaving her four hundred and fifty marks, equal to about 33c in American money. It cost her four hundred marks for a pair of soles for her shoes. The people in Germany don't get enough money to live properly, excepting the Socialists, who belong to the Union. Poverty is everywhere.

Streets: I had always read and heard about Under den Linden Strasse and heard about the beautiful linden trees. I found there nothing but old water elm trees, such as we dig up and burn. Of course, we went through three of the Kaiser's schlosses, as they call them. They were beautiful. The winter schlosse was in Berlin, the summer schlosse at Potsdam and the forest schlosse.

I figured there was one beggar to every forty foot of sidewalk Under den Linden Strasse. They were not ordinarily beggars, but men with both legs off and many of them helpless cripples, and widows with two or three small children. When one dropped money in their boxes or baskets, the children would run after the donor and kiss his hand. There were beggars everywhere. They did not bother the German people as much as the Outsiders or foreigners. There were three thousand foreign travelers in Germany last summer and the consequence is that beggars were pretty thick in the traveled zones.

Means of Deceiving the Outsider: After I got my German polished up a bit I thought I could deceive the merchants and pass as a German by talking German to them, but I could not fool them for a minute. The Socialistic laws legally authorized the charging of 40 per cent on sales to foreigners over the price charged the Germans.

A Purchase: I want to tell you about a knife I bought. I left my pocket knife at home, thinking I would buy one of the celebrated Henkle knives while in Germany. I went to a Henkle store and told them in German that I wanted to buy a knife. The clerk showed me some and I picked one out and asked him how much it was, and he said, "9,000 marks." It certainly does keep one figuring in American money when you go from Holland to Belgium and from Belgium into France and from France into Germany. You get so tired figuring that you pay the price asked and pass on. Well, I paid the 9,000 marks. When I got across the street, I got thinking. It then dawned on me that the fellow put one over on me. I concluded I would try elsewhere. I then went into another store and saw the identical knife. I asked in German again how much it was. This clerk did not know I was an American and charged me 300 marks.

Religion: So far as religion goes, they have divorced the Church and the State. Before the war, the Lutheran Church

minister's salary was paid by the Government. The kind of religion they had to practice was dictated by the Kaiser's Government. In the Dome Cathedral, a beautiful church, from which the Kaiser gave his religious dogma proclamations, is a little crescent platform. In the center is the Kaiser's throne, on one side the Queen's and on the other side the crown prince's chairs. There were seats for the whole Kaiser family and in back of them were the seats for the Kaiser's guards. An ordinary man could not visit the Dome when the Kaiser was there. This struck me very strange. We also went through the palace schlosse and saw all the beautiful things there, particularly the throne room. I want to say the world has furnished nothing that was not represented there. The best and greatest from all lands. One was an Oriental room, one a Hungarian, one a French, one a Japanese, one a Chinese, and all the other countries had furnished rooms, each of the very best that that particular country could furnish. That did not surprise me a bit.

Morals: Some people used to tell me of the morals of Europe. Well, I never understood it as I do now, and I can convey it all in one sentence. I would say that Sodom and Gomorrah had nothing on the morals of Europe today.

Conditions While Travelling: I carried credentials that took me everywhere. When I tell you that Dr. Sayre, an eminent physician, gave me statistics, showing that out of 1,790 children, 344 were fit to go to school, the rest being sick with tuberculosis, blindness, infantile paralysis and all anemic from being underfed, you can get some idea of the conditions there. You go through one of these traveled zones and find a woman with several children really hungry; you cannot help but drop a contribution. But we found the beggars so numerous that we did not have enough to go around, so we got a lot of coins which made it very handy to drop one in a box or basket we were going by. In the Leon Hotel, an American managed hotel, I walked up to a cigar clerk and said, "Give me a Romeo and Juliet cigar," and I laid down five hundred marks. He said, "I want 1,400 marks." He charged me 700 marks for each cigar or about 2 for one dollar.

Feeding of School Children: I went into a school in Berlin about lunch time and each child had a piece of black bread, which we call "Bumpnickel," and not one had anything different, no butter or any other spread. They were all dressed alike and had different expressions from our American children. When dismissed, they did not run, laughing and happy, but they were silent and sad. I think some of the days that we travelled in Germany I did not see a smile or hear a laugh. I imagine from what I learned about prevalent diseases in Germany that they are a nation that is not going to revive quickly. My banker told me one of the officials in Mellon's bank wanted to talk to me when I got back. I went to see him and he said, "Tell me all about your travels in Germany," and he also said, "Tell me how to get that mark business fixed up over there." I said to him, "Is it a fact that 48 per cent of the gold of the world is stored over here in the Treasury of the U. S.?" "Yes," he said, "that is right." I answered, "Take the 48 per cent of the gold and put it back of the money of Germany, Belgium and France and you will cure all the European money trouble." He said, "We cannot do that."

German Sentiment and Government: I went to Europe friendly and to Germany feeling sorry for them, but when I heard the Germans talk, it changed my mind. Among the first I met was a professor and I asked him if they were going to retain the Socialistic Government. He said, "No." Were they going to get back the Kaiser and his reply was, "No." Then I said, "If you are not going Socialistic and are not going back to the Kaiser's Government, what are you going to do?" He answered, "We are going to be a Republic." I contributed liberally to his children's fund and a friendship sprung up between us. He advised me that the German people are not ready for a republic. They are not ready for self-government. The Germans do not know anything else but to obey orders. When they were told to go, they went; and when they were told to come, they came. The professor said, "We are ready to have a republic, but not one with a Hohenzollern at the head of it."

If anyone will travel over that country they will waken up that the Hohenzollerns were a pretty expensive proposition to Germany.

Museums: We went through three of the Kaiser's houses, and the money which had been lavished on them was terrible.

A great many of the articles had been sold, sold to the public to get rid of them, and now all his places are used as museums, the decorations and paintings are the most lavish you could imagine. They have a war museum and in it you will find every implement of war as far back as man knows, from the club with which Cain slew Abel up to the present time. Then, of course, they have their art museums. I had always read about the fine artists of Europe and I thought they were the only artists in the world. I saw the wonderful pictures that Germany had taken from the Cathedral at Rheims and Verdun and Bruges. We saw the pictures upon which the reputations of these artists were established. There are beautiful paintings, by the thousands, of nude figures of men and women. In every fine art palace a large per cent of the pictures on the wall and the statuary in the buildings and parks are nude. I wondered what impression they had on the boys and girls of Europe who have been subject to these exhibitions. You will find the answer on highway and by-way. The women on the streets by the hundreds hold up men and ask them to accompany them for immoral purposes. Any man who has been over there will tell you that is the truth.

Socialistic Laws in Germany: Wages are regulated by a so-called labor commission, who have power to increase or decrease the pay of labor per hour, weekly, and all the notice they give is in the newspapers. Any employer who violates the commission orders is sent to prison. Employers cannot discharge any workmen in their employ.

Financial Conditions: A property owner cannot evict a tenant from his own property. The rent is fixed by the rent commission. If a man owns a house of ten rooms and has a family of only five members, then the rent commission orders him to vacate five of the rooms in his own house and they will be rented to a tenant over which he has no control. Five million people in Germany who lived on income by rents, interest of money and bonds and who did not need to work before the war are now destitute because before the war about 4 marks equalled an American dollar and now it required five to six thousand marks to equal one dollar. The mark has lost its buying power and they cannot sell their property because they cannot give possession to the buyer. Therefore they own property but are hungry. I was told by a lady who wanted to sell her property to me that she received for three rooms in the attic seventeen cents per month, American money, and received 33c for two rooms in the basement. She again lost $\frac{3}{4}$ of her already small rent in the buying power of the mark when the mark dropped from 2,000 to 6,000.

The Next War: One cannot be among the German business and military men very long without hearing talk about the next war. I had a number of men tell me that Germany had the best officers in the world, and that many hundred are now over in Russia, drilling the six million Bolshevik soldiers and that if they can in some way get the necessary equipment, they will fight again and since the next war will be fought by aeroplanes and poison gas and detonation bombs, it therefore, will not take much money and time to get ready. Seventeen German aircraft factories have moved to Holland and Russia and Russia has given to Krupp Corporation two miles square of land to build a branch factory. What does that mean? Russia called their 1922 class to the service. What for? Russia is buying guns and drilling her soldiers. What for? Russia has passed a law that if a girl of 17 is not married, then any man can register a claim for her as his wife and she must marry him and if no offspring results from such a union, then they are automatically separated and she will be reunited with another man. Germany enacted a law by which a boy after becoming 17 years of age can marry, and he must marry before he becomes 24. Why? The answer is to get more soldiers as soon as possible. America saving the children of the bull-dog nations of Europe is a mistake and should be stopped at once.

If Russia, Germany and Turkey succeed in getting together, then it will cost more American soldiers and money than the World War; and the babies you now send money to Europe to save, you will again equip our soldiers to send to Europe to shoot them when they become soldiers. George Washington, in his farewell address, warned America against foreign entanglements. That may have been good policy at that time, but that doctrine does not hold good now. The interest of the United States is now spread most all over the world and we cannot escape the responsibility of our greatness. The

United States will be drawn into the next big war the same as the last.

Preparation for Next War by European Nations Today:

Every European nation is now building aeroplanes and they all have air ministers who are dictating the kind of airship to be constructed and all the nations subsidize all the ships so constructed. Why? So that they can be called and be useful in the next war. Our Congress is asleep the same as before the World War. The United States should build at least one hundred of the speediest commerce destroyers in the world with flat decks for airplane use. Also submarines of the speediest afloat; at least two boats of each kind to any other nation's one. They should also build airplanes faster, more powerful and speedier than any other nation.

Anti-American: Propaganda is at work in the United States at present by some men and newspapers who advocate that some reduction should be made in the German war debt or reparation by France and Belgium; and in turn the United States should forgive and reduce France's and Belgium's loans a like amount. Now the fact is that our Government spent between four and five billion dollars in money and 78,000 lives of our American boys in a war that was not of our making and after Germany was reversed and repulsed, but not subdued, then the United States, the victor government, forgave them their sins and debt. Is there any place or time in the history of the world where a nation attacked another nation by willfully murdering its people and then, after reversing the attacking nation, the victor nation forgave them both sin and debt? If the United States Government had submitted the question of forgiveness of debt and sin of Germany to the voters of the American nation, it would have been almost unanimously voted "NO." So much for Wilson's pussyfoot administration. Any man who advocates forgiveness of debt is an anti-American and a greater enemy of the American people than the pro-German ever was. Let us suppose our Government would reduce the debt of European nations to two billion dollars (two billion dollars is only reasonable and less would not be creditable to the great United States of America). The only billion dollar transaction in the history of the world prior to the World War was the Bismark war reparation against France in 1871, fifty-one years ago. An idea of the vastness of a billion dollars may be obtained from the fact that France has paid only 18 per cent of their billion in fifty-two years. There is no wealth created except by labor; therefore, if a two billion present should be made, the American people would have to create by labor a like amount of wealth in our mills, mines, factories, forests and fields and by reason of the vastness of this sum of money, we would kill, maim and wear out more American men than have been killed in the World War. It would be a mortgage on the future generation of Americans. Therefore, silence any man who advocates the forgiveness of any amount. Do it by persuasion if you can, but by force, if you must, as there is no room in the United States for men of that caliber. Germany should be forced to pay the damage done Belgium and France in full. Germany should be given reasonable time to pay and, if payment is not made on time fixed, then France should be permitted to enslave Germany until the last dollar reparation is paid, and the longer the enslavement would last, the better it would be for Europe. There is one thing sure that while in slavery they could not start out on another murdering expedition of their neighboring inoffensive nations.

My Travels in Belgium and France: My travels of seven days, by automobile, through the war zone of Belgium and France equalled eleven hundred sixty-eight miles and I was never out of sight of the wreckage where whole cities were absolutely destroyed. In some villages, the building material was hauled away and used for war purposes and there were many hundreds of thousands of acres of land turned over with non-productive white marl on top and, therefore, cannot again produce without being levelled and sub-soiled at a cost of many times more than the land will be worth when done.

League of Nations: Before my travels and investigations in Germany, Holland, Belgium and France; first, I sympathized with Germany because I thought the war reparation had been padded; second, I believed that Germany was subdued and that she had reconciled herself in ample submission and would pay her reparation, but one cannot live in Germany very long without being impressed and informed that Germany is not willing to pay any reparation unless it was reduced to such a small amount that it would not be worth fussing about. Third, the fight is not taken out of Germany.

It seems she has blood-lust bred into the race. She seems among the European nations what the bull-dog is in the dog family. If our Government had joined the League of Nations we could have dictated the peace of the world for centuries. We could have extended the Monroe doctrine and its policy all over the world. The meat-eating nations control the world and they are all in debt to the United States to such extent that they could not question the United States policy. All the nations of the world, it seems, were on their knees kissing our flag and flattering the United States and why should peace be interrupted for many centuries with the United States in control? My time is now up. I thank you all for your kind attention. (Applause.)

President Burton: I am sure we have all been interested in what Mr. Mayer has been telling us, and we will all want to talk to him, but the Secretary tells me Mr. Ryttenberg, who is down for a paper this afternoon on "Producer Gas an Ideal Fuel for Burning Face Brick," is here; and as he is leaving this evening, think we had better hear him now. Mr. Irving A. Ryttenberg, of Sumter, S. C., gentlemen.

PRODUCER GAS AN IDEAL FUEL FOR BURNING FACE BRICK.

Irving A. Ryttenberg, Sumter, S. C.

Mr. Chairman and Gentlemen of the Convention:

You have got me at sort of a disadvantage. I am more used to writing love letters to "Archi," who does not know what I am talking about and tell him my trouble, than talking



Irving A. Ryttenberg, Sumter, S. C.

to you hard-boiled guys—I mean hard-burning guys—you know more about the subject than I do.

But "Pop" Randall said he needed me to fill a gap, and here I am. "Pop" Randall proposes and God disposes. I don't know what grudge Secretary Randall has against any of you, but once before he proposed that I make a talk, I believe he said talk to you, but the Lord intervened and saved you, by keeping me at home sick abed. This time you were not so fortunate, although you almost escaped. I wrote Secretary Randall the other day that my partner's condition was such that I could not leave, and I thought you were safe. Mr. John P. Maurer, for twelve years the secretary and superintendent of the Sumter Brick Works, departed this life on February 1. So to get even, in part, with the loss I sustained, I resolved to come on up to the convention, and here I am.

Mr. Randall did not seem to think it made any difference how that gap was filled, or by whom, just so there would not be a gap. In other words, here I am a gap filler, in this instance.

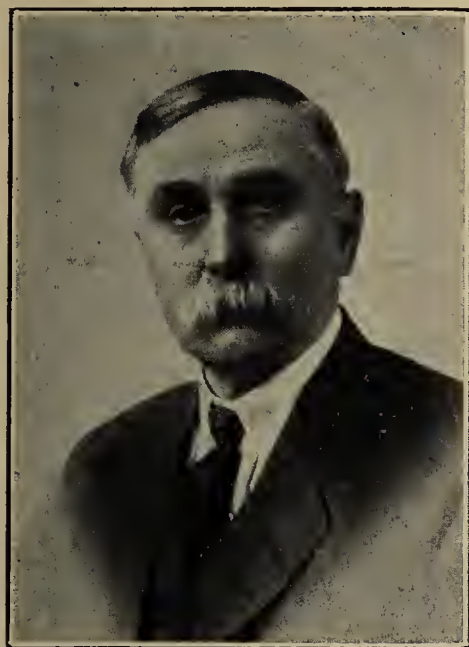
It reminds me a lot of a darkey who was driving an old tin lizzie after having first imbibed a few drinks of moonshine. He drove from one side of the street to the other, side-swiped

a fine Packard, knocked down a lamp post; farther down he crossed the street, ran into an awning and demolished it; then he ran into a fence, and finally came to grief against a brick wall. Some one said, "That nigger ought to be arrested for reckless driving," and a negro standing by said, "Cap'n, that man ain't reckless; he just don't give a dam." (Laughter.) Now, you know about how I feel in regard to what I say this afternoon.

The subject given to me to talk about was something about "Producer Gas, an Ideal Fuel for Burning Brick." The three things necessary for ideal brick burning are economy, even temperature, and control. When you convert all the coal into gas, without waste, you are practicing economy. When you dump your coal from your cars at your producer shed, hoist it by elevator, and feed it to your producer, instead of hauling it to the kilns, you are economizing on your labor. We have found in our case that our labor saving alone would pay the interest on the investment.

We burn at a high temperature, 2,600 degrees, and we always found it difficult to maintain an even heat, until we installed the gas producer. Now, we do not. We formerly had much trouble with our eye-brick on account of air entering the furnaces when firing direct, and of course, checking the brick. Now we can maintain any temperature desired for any number of hours without varying. We have to have a high temperature, and the way we are situated we have to have a gang of niggers, so it means a great deal to us.

What is more desirable in burning than having absolute control of the draft? With gas you have absolute control of the heat. The opening up, or closing down of a valve, and there you are. With tender material, where a few degrees may mean a loss, what could be more ideal for burning? We



J. Fred Smith, Omaha, Neb.

don't have any of the trouble some of you have with coal burning.

If I had really had my choice on this subject, instead of "Producer Gas, an Ideal Fuel for Burning Brick," I would have changed it to "Produce Your Gas. It is not only Ideal, but necessary to Sell your Brick." When you generate your gas you have to be careful. Of course, some have a natural flow, while others have to generate it by using B. L. D. I could then talk on a more familiar subject. I hear some of you ask, "What is 'B. L. D.'?" It is what we call Bootleggers' Delight. (Laughter.)

Now, I never made a speech but once before in my life. If you want to ask me any questions, I will be glad to answer them if I can. (Applause.)

General Discussion.

Mr. Cahoon: What is the cost of burning brick by the producer gas system, compared with using the coal itself?

Mr. Ryttenberg: Considerably less. The best answer I can give you. We used to take about 1,300 pounds to the thousand brick on an average. Now our average is around 700.

We have on some certain kilns, which we specially tested, burned down as low as 430 pounds to the thousand brick.

Mr. Cahoon: What does your coal cost you?

Mr. Ryttenberg: Our coal costs us \$6.75 per ton delivered. Boiler coal costs us less. We pay 75 cents more per ton for the gas-producer coal.

Mr. Cahoon: Where does your coal come from?

Mr. Ryttenberg: It is mined in Virginia. We get it from the Stoneleigh Coal and Coke Co. I do not think you can get any of it, for they are oversold way ahead. We do not have any waste except the indissoluble clinker which comes out. We have about two wheelbarrows of clinkers to the carload maybe three, and the ash that comes at the producer. You don't have any trouble to clean them out.

President Burton: Whose producer do you use?

Mr. Ryttenberg: I do not know the name. It is furnished by the Manufacturers Equipment Co., of Dayton, Ohio. We are so well satisfied we are now putting in three, and we think we will have enough gas to burn 3,000,000 brick at one shot. We water-smoke the kiln and burn the brick and everything inside of three days.

Mr. Cahoon: What does it cost to build a producer gas furnace?

Mr. Ryttenberg: I could not really give you the cost. We have a clay with which we use a lot of grog, and we don't have enough breakage to run us. We have to buy bats. We used to give them away and now it costs us \$30 a car. If we get too much grog in our brick they clinker up.

Mr. Smith: What kind of a kiln do you use?

Mr. Ryttenberg: We use heavy clamp kilns. The expansion in our clay is so great it snaps an inch and a quarter kiln band. Our clay is very high in silica. Everything about that damn plant is just the opposite of what yours is.

President Burton: What do you make?

Mr. Ryttenberg: You fellows try to see how pretty and nice and smooth you can make your brick, and we try to see how rough and ugly we can make ours. That sounds like a joke, but it isn't. It's the truth. We don't try to make anything uniform in color, texture or anything at all.

Mr. Smith: What are your brick used for?

Mr. Ryttenberg: They use them for high-class work; high-class residence work—churches, work of any sort where they want a high-class job; a reproduction of old English brick. When we get hold of an architect who know how, it is wonderful the job he works out. Before the Revolutionary war, or about that time, they used to ship brick down into the South from England which had come over as ballast. Old English red brick, beautiful colonial brick. Last year was the first time we ever had the opportunity of returning the compliment. We shipped some brick to some of the British possessions. Sometimes we recommend them to architects who don't appreciate them. We can take our unburned brick right from the dryer and use them for fire brick for our boilers and kilns. We can sell them for fire brick.

Mr. Clippert: What is your capacity?

Mr. Ryttenberg: We have a capacity of 40,000 brick per day, but we don't make it. We don't try to see how many we can make, but how much we can get for them. It is not how many you make, but how much you sell them for. They would not be worth the time it takes to make them if the man with money did not want them. We go after the man with money, who don't mind paying \$10 or \$15 a thousand more for their brick if they get what they want. (Applause.)

President Burton: We thank you, Mr. Ryttenberg, and I can tell you we would like to have you on our program again next year. It is time to adjourn, but before we do so I want to announce the Committee on Resolutions.

Julius R. Lucktenberg, Ohio; Jay Terry, New York; W. C.

Mitchell, St. Louis; Thomas Kennedy, Swansea, Ontario; L. P. Isaac, Charleston, W. Va.; Joseph T. Byrne, Philadelphia, and J. F. Reynolds, North Haven, Conn.

Is there anything further you want to say, Mr. Secretary? If not, I think we may stand adjourned until tomorrow morning at 10 o'clock.

THIRD SESSION.

Friday Morning, February 9, 1923.

President Burton: Gentlemen, you will come to order. Secretary Randall will announce the first order of business.

Secretary Randall: We are going to go to this program this morning and stay with it until we have finished before we adjourn at all. Of course, after last night's late session, we do not expect a large crowd so early in the morning. The first paper on the program for the morning is that by Marion W. Blair, of Murphysboro, Ill., "The Brickyard Superintendent." Mr. Blair is not present, making some improvements at the plant which would not permit him to leave at this time, but his father is here and I believe is to read his paper for him.

Will P. Blair: Mr. President, Mr. S. A. Knisely, the secretary of the National Paving Brick Manufacturers' Association, is here and has consented to read the paper for us.



Marion W. Blair, Murphysboro, Ill.

Stanley A. Knisely, Cleveland, Ohio: Mr. President and gentlemen of the convention, it is beyond me to make any comments on this paper, except to say the man who has been selected to read it cannot possibly do it justice.

THE PLANT SUPERINTENDENT

By Marion W. Blair, M. E.

Mr. President and Gentlemen of the National Brick Manufacturers' Association:

The secretary has placed me in an embarrassing position in choosing for me the subject of this paper. If I treat the subject with too much importance, show that the superintendent is a vital part of the organization, in fact the most vital, I am in your opinion, an egotist.

If I show him to be of little importance, I risk losing my own job. If I criticize equipment, or management in general, I nurse a sore spot. If I soft soap incompetents, the paper is without value. There are but two courses. One is not to write the paper, the other is to hit straight out from the shoulder and stand the gaff. I choose the latter course, so here goes.

I should like to see more technically trained men aspire to fill the position of plant superintendent. There are too many ex-carpenters, bricklayers, machinery salesmen, trying to fill the position. The successful superintendent must have a ground work of engineering and physics to be able to grasp and solve the varied problems that are presented from day to

day; to understand the operation of the mechanical equipment in his charge and the chemical and physical changes which take place in the manufacturing processes. I do not decry experience. It must be acquired by the technical graduate to develop his full value. The man who has been trained to think in technical terms can acquire experience however, in a much shorter time than one who has had no such training and can only read the future by his own past errors, often repeating the error because he fails to recognize that he is attempting to set aside some law of mechanics of which he has never heard.

I spent several years in consulting and construction work. The ignorance of the principles of mechanics and construction was amazing. It might be termed a lack of common sense. I have seen men suck on the end of a hose in an attempt to syphon water uphill. I have seen attempts made to pull air through a twelve-inch brick wall to supply an exhaust steam coil for drying purposes.

I have seen a whole organization puzzled because there was no circulation in a dryer when the temperature at the base of the stack was lower than the outside air. Recent conversations with men in the same line, do not indicate that there has been much improvement. Most of these errors have been committed or countenanced by so-called superintendents. Other men with training and experience have been called upon to make money and get results with a conglomeration of kiln bottoms, dryer tunnels, mechanical equipment and general arrangement, together with a disregard for levels and drainage that would make a dog sick. Often, the more money spent, the worse it becomes and the only sane solution is abandonment and a fresh start.

I have superintended plants with three distinct types of motive power; gas engine, steam engine and electric motor driven. It is not uncommon to find all three on the same plant. Men spend a lifetime becoming expert in handling either one, but the superintendent is expected to know all of them and in fact he is seldom called upon except when the expert runner is stuck and has to be told how to get out of trouble.

I have had under my supervision at least six makes of clayworking machinery. The operators of these machines spend years within touch of them but they see nothing more than a spinning pulley and hear nothing but the grinding gears. If the column laminates or checks unduly, if the texture is bad or the cut crooked, if tile split down the center web, it is the superintendent who must find the worn augers, or a slipped core or loose key in the measuring cam. Head burners direct the firing, measure settle, draw trials and read temperatures, but it is the superintendent who must warn him in advance that the steam shovel is coming into that part of the bank which will require a longer time or less firing or produce a change in color.

The superintendent must get results in spite of the purchasing department, if it chooses to send him a six-ply belt instead of an eight, if they decide belt dressing is an expensive luxury, or that the old machine can get through another season.

One dynamite, or oil or packing may be as good as another, but often it is not, and price alone is never the determining factor. It does not always mean that money is saved when a requisition is ignored or delayed. The ingenious superintendent will get by. But like the salesman's new suit, the cost is there whether the purchasing department sees it or not.

Four or five men, for instance, can and do handle heavy dies and machine parts by main strength and awkwardness. The chain block which should be doing the work is paid for many times. Its cost, however, is not seen. It is buried in the payroll.

The local machine shop bill is paid month after month, sometimes without a whimper, sometimes under protest. But either way the machine tools which the profit on such work buys, are installed at the machine shop—not at the brick plant. Aside from the cost of the work itself, is the expense and inconvenience of delay.

A new casting is ordered by express and installed at night after a two days' shut-down. The old part, which could have been welded in a few hours, often without removing from the machine, goes to the scrap pile, just as all the literature about acetylene welding outfits has gone into the waste basket.

The blacksmith's helper runs a hand blower by the hour at 35 to 40 cents, while for every hour so run, an electric motor would do the same work a whole day without a single stop. Many times the superintendent's salary escapes in radiated heat from bare steam lines or air leaks in furnace walls. It is wasted in oil for lack of filters which would reclaim it for

further use. It is ground up in dryer waste from bad car decks or lack of dryer control. There are no records for guide or reference. It is hauled to the dump in burned bats due to rough and uneven kiln floors, wrecked bag walls, choked draft flues. Squeezing one more burn from a kiln out of repair, has cost the industry thousands of dollars.

The technical man is better equipped mentally to recognize and point out such inconsistencies of management. He can better connect up these conditions with excessive costs. Many plant managers will meet these criticisms with the excuse that they are too small for such things or that the money must be made before it is spent. If true or possible, why the bond issues to secure betterment in the larger industries? On such a small plant one would not expect to find a cost accounting system, but a selling price below cost which makes the small plant such a menace, would be expected.

It may be said with truth that many a man with no technical training has made a wonderful success, but what of the handicaps under which he has worked? How much easier could he have solved his difficulties had he been able to read intelligently the technical papers presented at these meetings, or published in the clayworking journals.

Technical and scientific subjects can be treated in simple language and avoiding chemical formula and mathematical equations, to a certain extent, but there comes a point where only a purely technical expression will convey the thought. One cannot write in French and leave the French out, and there are just a few thoughts in French which the English language is incapable of expressing. So it is with a technical paper.

It is admitted that the production of clay wares is a highly technical business. Then, if this is true, the men who are expected to get production should have the necessary mental equipment.

Without any reflections upon the achievements of the membership of this association, I venture the opinion that there are not ten men in this room who can give a clear and correct explanation of the difference between an oxidizing and a reducing condition in a burning kiln. It is part of the technical man's training to understand such terms and apply his knowledge of them to the production of better ware at a lower cost. That the non-technical superintendent is handicapped cannot be denied. The difficulty is in keeping such men in these positions. They are ambitious, they have a better appreciation of their own value, they are more sensitive to proper treatment and if they find they are not receiving salaries commensurate with the service they render, they go quickly to other fields. Any man who can successfully superintend a modern brick plant, can earn a mere living in a dozen different lines. As an example, we all know ex-superintendents who have become successful salesmen of mechanical equipment. Others who have become successful college professors. Others, heads of government bureaus. The question is not how he is to earn a living, but how the industry is going to hold him to his superintendent's job which may get him out at any hour of the night, which in fact knows no working hours, little vacation, but much hard work.

If the industry does not need engineering ability and will not pay for it, why continue to establish and support ceramic departments at our state universities? If it does need engineering ability in its superintendents, then why continue to let those who have it, get away from the manufacture of heavy clay products and devote their energies to the perfection of some other business?—(Applause).

General Discussion.

President Burton: We have listened to an excellent paper. Mr. B. W. Morris was to have led in the discussion of this subject. Is he present?

Secretary Randall: Mr. Morris is here, but does not seem to be in the room just at this moment. I think Mr. Blair, Sr., might have a word to say relative to his offspring's paper. As our president has said, this is an excellent paper and gives us some thought along a line which has been neglected.

Mr. Blair: I did my scolding yesterday, and don't believe I have anything to say along this line.

Secretary Randall: Going on with the program, we may hear a paper by Mr. Anton Vogt on "Kiln Construction," which he has requested Mr. Giejsbeek to read for him. Mr. Giejsbeek has come a long distance to be with us, all the way from Seattle, Wash. He is one of our old-time members. He himself will, I think, have something to give us a little later on.

President Burton: Gentlemen, Mr. Samuel Giejsbeek of Seattle, who will read Mr. Anton Vogt's paper. (Applause.)

Mr. Samuel Giejsbeek, Seattle, Wash.: Mr. President and gentlemen of the convention, this is a paper by Mr. Anton Vogt, who has a brickyard at Missoula, Mont. Last Sunday week, on my way here, I stopped over and had a visit with Mr. Vogt. He told me he could not come to the convention, and he said: "When you get to the convention I want you to read my paper for me." Now, anybody who remembers Anton Vogt, who used to come to former conventions, knows that he knows more about the business than I do.

KILN CONSTRUCTION

By Anton Vogt.

Mr. President and Gentlemen of the Convention:

Of the first importance to locate kilns is drainage. If there is no natural drainage, then it is best to dig out for a reservoir, about 12 feet in depth, and six feet in diameter, according to the number of kilns to be drained.

Connect with eight-inch pipe, to the bottom of the stack, and lay four-inch drain tile around the kiln to connect from both sides to the eight-inch pipe, Y, and whenever the reservoir fills up to the pipe, empty it with a steam jet or with a hand pump. No one can burn hard brick to the bottom of a down draft kiln, when the bottom is wet. **It can't be done!** You have to work against the law of nature, and **nobody** can do that. **Not yet.** Good drainage, and the extra expenses, will



Anton Vogt, Missoula, Mont.

pay big in the long run. Don't think the water will seep away. It can't, without a drain to attract it. Without it, it will stay under the kiln and when heated, in the process of burning, it will rise in the form of steam and chill the bottom of the kiln, and soft brick will be the result. Then the kiln is pushed and results in overburned brick or tile on top and around the fires. Therefore, proper drainage is the most important step before building a kiln. Consider this seriously, and you will avoid a lot of trouble in burning, which is the most important part of the clay business, as you must all agree from your experience and that of many others.

Laying Out the Kiln

Having selected the site for the location of the kiln, assume an elevation, or point for the level of the finished floor, such that the floor will be five inches above the ground level, after the surplus dirt has been removed. This is done so that you can pave around the kiln. It is much cheaper to pave with brick than with coal and shovel a lot of dirt with the coal into the fireholes and get clinkers that are hard to remove and if a fireman cannot remove them, he just leaves them for the fireman in the next shift. This soon causes trouble between them, and the kiln suffers, time and fuel are wasted and a bad burn results.

After you have the floor level, set a stake or permanent mark and level from it all depths for the footing, flues, wall and floor. The footing should be about six inches wider than the kiln wall and this should be centered on the footing to give it stability. The footing should be built to the top of the main and stack flue, and if the kiln is built with a spider bot-

tom and a well hole in the center, it should be built flush with the top of the well hole, then you have the projection of the footing to set the floor brick on after the lateral flues are up and the feather walls. The feather walls should be kept away from the kiln wall about two inches to allow for expansion, and to prevent buckling up of the floor. In larger diameter kilns, the main flue should also have expansion joints by inserting a two-inch plank and when the kiln gets hot enough these planks will burn out, leaving a space for expansion. If you want to keep your kiln floor level, do not omit to provide for expansion, as stated. You can do all these things during construction much easier than after the kilns are built and the floor begins to buckle up and push out the kiln wall above ground. Some may say, "We know that;" but I ask: how many do neglect it and not caution the bricklayers?

Marking Off the Fireholes and Doors

After the kiln wall is built five inches above the ground level, mark off the fireholes and door or doors, if you want two doors. The fireholes are, or should be, built separate, not tied into the kiln wall for the reason that when repairs become necessary you do not have to disturb the kiln wall, the brick some times falling down and leaving a big hole. Build an arch over the firehole to hold up the kiln wall, and you can repair the fireholes without any trouble and more expense.

Of course many may say, "We do that;" but I ask again, how many do not? We have seen hundreds of kilns that had the fireholes tied into the kiln walls.

While a four and a half inch firebrick lining may do for the



Samuel Geijsbeek, Seattle, Wash.

lining of the kiln with an occasional header for a tie, we cannot too strongly impress on you, to use nothing less than a nine-inch of the best firebrick for the jambs of the fireholes, and these should be all headers, using soap firebrick to break joints. When using slanting grate bars or a frame filled with firebrick as a grate, the corners of the firehole jambs should be protected with angle iron, to prevent the brick being pried loose when clinking.

Above the firehole arch a peephole should be left, so the firemen can note the heat at the bagwall. By observing the bagwall before firing, a careful burner can offer no plausible excuse if he overburns the top and the brick around the fires. In addition to these peepholes over the firebrick arch, another peephole should be over each firehole higher up. This peephole serves different purposes namely: the burner can observe the progress of the heat and when the kiln is on full fire and settling he can let air in when needed to temper the intense heat around the fires, around the bags and top of the kiln and drive the heat to the bottom and so equalize the top and bottom heat.—(Applause).

President Burton: Some very good points were brought out in that paper. Mr. W. D. Richardson is to open the discussion of this paper.

General Discussion.

Mr. Richardson: I am glad to know that the subject covered by Mr. Vogt in his paper is not so broad as that given on the program, else the discussion of it might profitably

take the whole session, or every session of this convention, for that matter, since "Drying and Burning Brick" is nearly the whole of brick manufacture these days. Clay winning, clap preparing and brickmaking machinery has been so highly developed in America, and is so nearly automatic that no special concern need be given to it, provided you have selected the proper machinery for your conditions and purposes. Drying and burning are the vital operations upon which the success or failure of the business must largely hinge, and about which the average brick manufacturer has much to learn.

Scientific drying and burning systems are only just coming into use in this country, but they will spread rapidly from now on, and the man who is to improve an old plant or build a new one should give these matters proper attention, or he may soon be out of the race when prices fall and the law of the "survival of the fittest" must operate.

Mr. Vogt is a man of wide experience in the burning of clay products and his advice should be given careful consideration. The subject of his paper should be changed to "The Construction and Operation of a Round Down-Draft Kiln."

The most important point in his paper, in my opinion, is the drainage of the kiln ground and the insulation of the kiln bottom from ground moisture. There is no specifications in kiln construction that the engineer has so much difficulty in getting carried out as this. Many manufacturers don't see the need of putting so much money below the surface, but they will every year spend this additional amount in coal bills without a question.

Mr. Vogt advises how to put on the narrow kiln bands, with the adjustable lugs, but I prefer a single band, thirty inches or more in width, riveted firmly, with no adjustment, the wall being laid up behind it. In fact, the best thing is the kiln encased in steel from the hub to a foot or more above the spring of the crown. Just inside of the kiln wall, from floor down, there should be an expansion joint, so that the flue walls and floor will not push the hub out. Of course it is still better to have the hub also encased in steel. There should be a good steel door frame, but with no bands across it. The rivets must be heavy enough or the band may burst. These things have all been worked out and tried out by engineers and there need be no experimenting.

Another point: The peephole over each furnace should be high enough, and should flare enough so that the burner can see his ware above the bag walls. It is a disadvantage of the round kiln that one can only see one fire at a time, and it is difficult to make a comparison one with another. In a rectangular kiln, looking through one peephole, one can see all of the fires, or the ware in front of all the bags, on one side of the kiln, and can judge at a glance which ones have a higher or lower heat than they ought to have.

The round kiln is a good kiln for general use, because it is economical in upkeep; still there is this question coming to every brick manufacturer, how long are you going to use these old-fashioned and wasteful kilns for burning your brick, when you can save such a large part of your fuel by building a continuous, regenerative kiln? In outlying districts, where only a few thousand bricks a day are in demand, the round kiln fills the bill. But where a plant is to be built to supply a large market that will require ten or more round kilns, the day is at hand when this will never be done again by any thinking man, because of the unpreventable waste of fuel with such kilns. When you can save in a continuous kiln, not any particular kiln, but any good regenerative kiln, one-half to two-thirds of the fuel, and this is a safe statement and means more than it did a few years ago, how then can you justify the building of the wasteful periodic kilns? In addition to the fact that a continuous kiln will save

you fuel, there is the advantage of better control. With the continuous kiln you can reduce the burning to a systematic process and get better results than can be had in the old periodic kiln. (Applause.)

Proper Drainage for Kiln Bottoms.

Mr. Blair: The very first suggestion made in Mr. Vogt's paper I do not want to let pass, and that is the suggestion with reference to drainage. That touches very much the same thing that I complained about yesterday. It is merely an academic expression, and does not mean anything at all, or if it means just exactly what it says, it is a very inconsiderate suggestion. If you say drainage, and you talk about drainage and don't go into the details a little bit, it certainly does imply that there is something there to drain. I want to put this suggestion to you in this form. We have this sort of trouble. It is a word which has been passed in road construction and it does not mean anything there. What we want there is elimination. We do not want any water there to drain. I do not care where you build your kiln, or what kind of a kiln you build, you have no business to so construct your kiln that it shall ever need drainage. You should construct it and should arrange so that the water will forever be eliminated at the bottom of your kiln. We understand some few things we did not understand some few years ago, and so we passed the word through this "drain." We said drain and drainage, and nobody understood what we meant. It was a good way of passing the buck and waiting for some interpretation you hoped somebody might make. We get the flow of water by a horizontal flow, or by capillary force. We do not know what it is, but we do know that some of the things we do when we want to supply that water that don't flow up hill. It will come up from the bottom of the earth and supply a volume of water and moisture that is a menace to the economy of production of the ware that should never be laid to the kiln at all. Drainage is a thing which has got to be understood unless we want to heap upon ourselves a continuous expense which ought to be avoided as well as any other.

Samuel Giejsbeek: That paper of Mr. Vogt's gave me a thought in regard to an experience of mine. You know the lumber people have to dry their lumber, and have their lumber kilns. I was on one of their plants, just on a visit, where they had two lumber kilns, and the manager said to me:

"You know something about dryers?"

I said, "A little."

"Well, we have one kiln down here which is a fine kiln, we can dry lumber in it in forty-eight hours. Then we have an exact duplicate next to it and we can't dry lumber in five days. We have had all the experts in the country to look it over. There it is, exactly the same design, a steam dryer just like the other."

I said, "I don't know what I can do, but I will look it over."

I found one kiln was on piles above a sheet of water, about six feet above the water. The bottom was concrete, and the steam pipes were all above on that piling; that is, the kiln in which they dried in forty-eight hours. The other was on a solid bottom where the water came down the hill side, and they could not dry the lumber in five days. There was no drainage on the other kiln, for there was no need for it, it was dry on the bottom; but the kiln which was on the side of the hill and needed drainage did not have it and was wet.

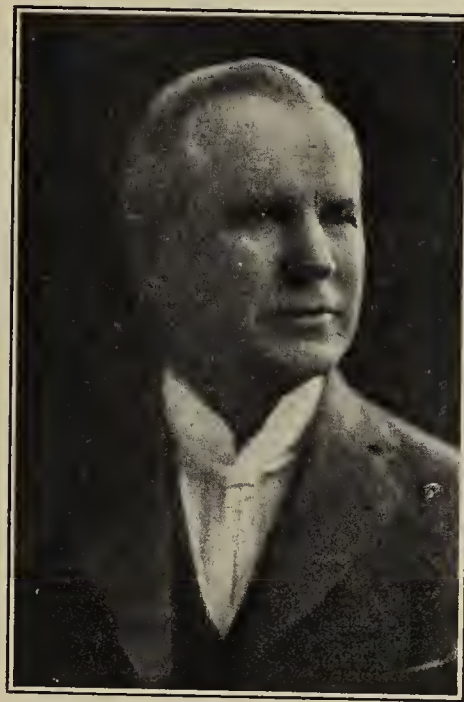
William Hammerschmidt: I would advise everyone to build his kiln so the water will run away from it. I never had any bother getting water into my kiln. I went into a brick plant in March. The plant was on top of a hill. When a wagon went down the hill you had to put on the brakes, the horse could not hold the wagon. The kiln was lower down and I went to the kiln, and there the snow water was melting and

running into the kiln; six inches of water in that kiln. That man had built his kiln lower than the surface of the ground so it would be easier to put his brick in the kiln and take them out. It is better to have a little trouble or cost in transferring your brick and wheeling them out than to have to contend with the water in the kiln.

Mr. Blair: Now, Mr. Hammerschmidt, I am not satisfied to let you get away with that. I have known brick kilns to be built on top of a hill where the surface water all runs away, but by this capillary force it don't run away, but turns around and goes back and runs into the kiln, and it is as bad as if it came from the downward flow. So you have to provide against the downpour or horizontal flow, and you have to guard against the upper flow of water by capillary attraction, or you have not safeguarded your kiln.

Grant Dibert, Pittsburgh: Can you explain how you do that? You say even on the top of a hill you would have this capillary attraction. What would you advise so the water would not be drawn up?

Mr. Blair: Was that remark addressed to me? I intended to avoid giving advice on that question, but since you ask I



W. D. Richardson, Columbus, Ohio.

will tell you frankly; if by testing my soil and the operation of capillary force I found it was a soil that fed the moisture by capillary force constantly, I would shed it off by putting at least 18 inches to two feet of broken stone in the bottom upon which to build my superstructure. If you have a layer of broken stone of that sort it will break down the capillary force and the water will not pass up.

President Burton: If no one else has anything to say on this subject, I think we may go on to the next. This has been pretty well discussed.

Secretary Randall: We passed the paper, "Making Hollow Building Tile on Brick Plants," by Mr. G. W. Denison, of the Ohio Clay Co., of Cleveland. I see Mr. Denison has come in, so we can hear his paper now. Mr. Denison is an old-time faithful member of the Association and we are glad to have his contribution to the program.

MAKING HOLLOW BUILDING TILE ON BRICK PLANTS

George W. Denison, Cleveland, Ohio.

Mr. President and Gentlemen of the National Brick Manufacturers' Association:

No doubt this subject was suggested for the benefit of those brick manufacturers that are considering the manufacture of

building tile along with brick. Probably there are brick plants located in sparsely populated territories where the demand for one product is not sufficient to justify continuous operation at full capacity. In such a case, raw material, plant design and equipment permitting, it might be advisable to run part time on hollow building tile. By so operating continuously at full capacity, costs could be reduced sufficiently to permit of a greater shipping area, as well as keeping the supply of each product in proper proportion to the demand, which will tend to maintain fair prices.

The brickmaker considering such a program must decide this move for himself, after careful study and tests of his clay, etc.

There are difficulties in the manufacture of tile, the same as in any other business. The average hollow tile plant manager can see how he can get costs down closer to the selling price for next month, when he overcomes the difficulties of this month, and it is this hope and the fascination due to the diversity of difficulties, that carries him on from month to month and, if he doesn't weaken, he will eventually learn how easy it is.

I will start with the clay or shale in the pit and go briefly through some of the processes in the manufacture that are of special importance when comparing the manufacture of tile with brick.

It is possible to make a merchantable brick of a clay that is not sufficiently plastic to make a merchantable tile. This may or may not be overcome by more thorough mixing of the raw material at an additional cost. It is also difficult to make



George W. Denison, Cleveland, Ohio.

tile profitably, of a clay that has excessive shrinkage or other poor drying and burning qualities.

Screening of the ground clay to the proper mesh, which is finer than necessary for brick, is very important, and don't forget that as you slightly decrease the mesh, you greatly decrease the grinding capacity. It is well worth the time spent to make a study of the grinding and screening, to the end, that the screened product is not only free from large sized particles, but that the percentage of very fine dust is not excessive. I believe this is a comparatively new thought in heavy clay products manufacture and worthy of consideration.

Pugging, molding, cutting and off-bearing, are where you find little in common. Pugging must be more uniform for tile. The water content is greater, hence a more positive feed to augurs is necessary, or a greatly reduced tonnage will result. The augur barrel, augurs and propeller must be properly designed for your particular clay, to obtain satisfactory results.

Hollow ware dies, with a few clays, give little trouble, but with the average clay, require almost constant attention.

To get the best results, an automatic cutter for hollow tile must be one that is not spasmodic in its action nor has reciprocating parts, since it must furnish a uniform resistance to the clay column and only one cutting wire at a time should enter the column.

The off-bearing or hacking requires laborers skilled in the work, since the quality of the finished product depends largely upon this operation.

Cracked tile is the tilemaker's worry, that is always with him and it can never be entirely eliminated and upon the resulting percentage of merchantable ware, depends the cost of production and loss or gain, and this difficulty increases as

production increases and can be caused by anyone of the operations in the manufacture of tile.

To reduce the loss of heat by radiation and the total cost of production to a minimum, tile must be dried and burned in less time and I believe it is true of any operation in any business that as you increase the speed, the importance of supervision increases.

So to conclude, it is my opinion that to even approach a minimum production cost on tile, is impossible on any existing brick plant, as it requires better and different kind of supervision, higher skilled labor and equipment and plant layout designed for the purpose and will prove profitable only in such localities where competition is in one way or another restricted.—(Applause).

General Discussion.

President Burton: I am sure we have all been interested in Mr. Denison's paper.

Grant Dibert: That was the one subject I noticed on the program before I left home that I was interested in. I am interested in it because in our district everything is going to hollow tile; flats and apartment houses being built of tile. We have made hollow tile and brick in the past with our machine, but it is not designed to make hollow tile, and that was one question I wanted information on as much as anything. I have always felt if you were going to make hollow tile, you would have to have a particular plant for it, so far as the machinery is concerned. I would like to know something about that, if there are gentlemen here who could tell me.

Thomas Kennedy: We have a separate machine for our tile. We have them set side by side, and do not run them at the same time, but use one machine for hollowware and the other for brick.

President Burton: This is a good opportunity for some manufacturer of machinery, especially of hollow tile machinery. Is there any one who cares to discuss this matter further? If not, I think we can hear from Mr. Penfield at this time, who has something to tell us about "Improved Methods of Making and Handling Soft Mud Brick." Mr. Penfield is the President of the American Equipment Co., Chicago, Ill.

IMPROVED METHODS OF MAKING AND HANDLING SOFT MUD BRICK.

R. C. Penfield, President, The American Equipment Co.

Mr. President and Gentlemen of the Convention:

Up to this present time, it has only been possible to mechanically set brick in the kiln, and after they are burned take them out mechanically on yards using the stiff mud process; but we have recently developed machinery for mechanically handling brick when made by the soft mud process, so that it is now possible to produce soft mud brick as cheaply as stiff mud brick—in fact, there is no cheaper way of producing brick now than by the soft mud process where our mechanical devices are used, and in which the brick are not touched by hand in the course of manufacture. In fact, from the time the steam shovel takes the clay out of the ground the brick are not touched by hand until the hod-carrier picks them up to deliver them to the mason who is putting them in the wall.

I have some moving pictures here which will show this whole process much better than I can attempt to describe it. Some of you may have seen this film, but if so, I fully believe that you will enjoy seeing it once more. When making brick by the process I will now show you, you will notice that the hand method is entirely eliminated and the soft mud brick manufacturer can now make brick in which the hand method is entirely eliminated, thus following the lines of manufacturers of other products, notably steel and cement, in which the full operation is performed by machinery.

One film which I have shows the present method of making brick on the Hudson River. You will notice that the brick are handled by hand in about twelve operations, and in this twentieth century, this certainly ought not to be. One plant that I saw last year had a capacity of 24,000,000 brick, and the owner told me that he was unable to make more than 9,000,-

000 brick, because he could not get the labor. He started only four machines out of eight that there were on his yard, and eventually was running only one machine, and he only made 9,000,000 brick—and that with brick selling at \$20.00 per thousand.

I think that every manufacturer ought to look carefully into the proposition of eliminating as much labor as possible and making more brick per man. With the system we have perfected, we can produce about 4,000 brick per day, per man, from the clay bank to loading the brick on the barges or cars. This statement is important if it is true, and we are here to show you how true it is. The demand today is for cheaper building material and cheaper construction, and if the methods shown here are adopted and used, there is no reason why brick cannot be produced cheaper and why the brick manufacturer cannot keep up his production, and in this way be able to supply the demand and to give to the building public the very best of building materials—one that is absolutely indestructible from every standpoint.

(Showed moving pictures.)

I want to call attention to one matter you may not have noticed. Every brick that is made goes onto the job. There may have been some broken, but if so, they are set in the kiln and taken out of the kiln, and they are sold and paid for. There is not a single bat left on your yard, and to add to this, the contractor, when he receives the brick, gets fewer bats than with the old hand method. Contractors, after they have received machine-loaded brick where some of our machines are installed, complain if they receive a load of hand-loaded brick, because there are so many bats in it, caused by the loaders slamming the brick down; and their cry is "Send us some more of the machine-loaded brick." This is a very great advantage to both the manufacturer and his customer. Can anyone here from the Hudson River give me any idea as to what is the percentage of the brick that are dried in the open air on the Hudson River?

Mr. J. Terry: Probably two-thirds.

Mr. Penfield: In any event, they are all set in the kiln by hand and all loaded by hand onto the boats or barges, and when they arrive in New York they are taken out of the boats or barges by hand and thrown onto the trucks. Now, with our method, the brick are never touched by hand from the time the clay leaves the bank until the brick get to the job.

Both the steel industry and the cement industry are very wideawake. They have machinery that runs twenty-four hours a day. It is automatic and eliminates hand labor, and if you gentlemen want to stay in the brick business and progress as these other industries are progressing, you have got to get busy and make your product cheaply, and get your money out of it. (Applause).

President Burton: Mr. Penfield, we would like to have you stay on your feet just as long as you can, and if anyone wants to ask you any questions, he can do so. We want all the discussion possible on this question, and to get all the information possible out of the pictures that you have. They are certainly worth while being discussed.

Mr. J. Fred Smith: Can these machines be used in connection with continuous kilns?

Mr. Penfield: You certainly can use them to perfection in continuous kilns. All that it is necessary to do is to have a removable top to your kiln. You can then take it off, use the setting machine, and put the roof back on again to burn the brick. After they are burned, you take the top off again and mechanically take the brick from the kiln.

Mr. Grant Dilbert: Do you build a new top every time?

Mr. Penfield: No, we do not. We have a removable top. We can show you a moving picture film illustrating how this is done, if you would like to see it.

President Burton: I am sure we will all be glad to see this film.

(Mr. Penfield showed the film illustrating a continuous kiln with a removable top).

Mr. Smith: Whose plant is this?

Mr. Penfield: This is the plant of the Francis Vitric Brick Co. in Oklahoma.

Mr. Mayer: Are these covers ample? They do not look as if they fitted sufficiently well.

Mr. Penfield: It is just the same as a kiln burning pav-

ing brick. You use these covers as long as they fit perfectly. The only thing to do to renew them, is to put in a new row of brick. This is a new device put in last year, and it has greatly improved the quality of their brick, and they are very much pleased with it.

Mr. Mayer: Can you use this machine in connection with a Dressler kiln?

Mr. Penfield: No, I would not undertake to do that, because the brick cannot be taken off as they come out. We have a great many Haigh Continuous Kilns in operation. I think you all know what the Haigh Continuous Kiln is. It is advertised in all the papers and you see them all over the country. It is really the ideal way to burn brick.

Mr. Lucktenberg: How high can you set the brick?

Mr. Penfield: We are handling them in Chicago fifty-three brick high. There is quite a little shrinkage in the material, but they do not get out of shape enough after being set with the setting machine to affect the loading machine handling them all right. In the Hudson River District, the clay does not shrink so much, and fifty-three brick high is not uncommon. For anyone having a material that takes a lot of fuel



Raymond C. Penfield, Chicago, Ill.

for burning, the removable top kiln with the setting system is certainly ideal. It not only means economy in labor, but also in fuel; for without economy in both labor and fuel, a brickyard in a large city is not going to succeed. There is not a yard in Chicago where they do not make at least 200,000 brick a day, and up to 500,000 brick a day. If you can make that many and set them all in the kiln with one crew—and I have known an instance where they loaded 250,000 brick out of a kiln in a ten-hour working day—then you will be making your brick at a minimum of cost. It is only by large production and cutting down the cost of labor and fuel that you are going to cut your cost down right, and we have the facility and means for doing that. (Applause).

President Burton: That has been an instructive picture and I am sure we are very much indebted to the Galion Iron Works for their kindness in loaning us this moving picture machine. We certainly enjoyed their picture as well as those shown by Mr. Penfield. What is the next on the program, Mr. Secretary.

Secretary Randall: We have with us today a representative of one of the best known institutions or organizations in

the world, Mr. Sydney A. Linnekin, vice-president of the Babson Institute of Wellesley Hills, Mass., who has a message for us, "A Practical Program for Better Business?" He is now ready to present his paper. (Applause).

A PRACTICAL PLAN FOR BETTER BUSINESS.

Sydney A. Linnekin, Vice-President, Babson Institute,
Wellesley Hills, Mass.

Mr. President and Gentlemen of the National Brick Manufacturers' Association:

I would like to say at the start, I do not know anything about brick, except they can be used sometimes as missiles, and I hope none of you are carrying samples. I have been enjoying this meeting immensely, learning a lot. I assume you are brick sellers as well as brick manufacturers, and my remarks will be based chiefly on the selling of brick. After all, the bricks have to be sold to keep the plant running.

The business outlook for 1923 is for a continued good volume of business. In fact, when the balance sheet is finally drawn up for 1923, the volume ought to exceed those of 1922.

Yet the situation is one that calls for more caution than would seem necessary from surface conditions. This statement is made from the standpoint of both practicability and psychology.

We are in a peculiar phase of business progress such as exists only once in several years.

Let us not forget for a moment that the excesses indulged in during the war, are not yet paid for but they must be paid. Moreover, they will be paid for on this side of the Atlantic as well as on the other. We cannot logically and permanently expect good business in this country with the rest of the world operating at a loss. Outside of Great Britain, every European nation is being run at a tremendous deficit. And in most cases the military expenditures exceed the interest on their bonded indebtedness. Even though yours is a line which may not figure directly in foreign trade, yet your activity is just as much affected by the foreign trade outlook. Certainly the business of your customers is influenced by foreign trade. I always like to use the example of the highway bridge built to sustain a weight of ten tons. Let us assume, for instance, that an eleven ton load passes over the bridge, causing the bridge to buckle. What goes through, the last ton or the whole eleven? The answer is obvious. Even though our foreign trade may be but 8 or 10 per cent of the average annual volume of business, cut into that as deeply as our war-time export trade has shrunk, and you have a serious economic gap in this country. Doubtless there are many here who have felt the pungency of the old-time remark that the "profit comes out of the last 10 per cent of production."

Another interesting sidelight is that international exchanges are created by money or by merchandise. With exchanges at such incomparable discounts, the only way for a semblance of balance is through exchange of merchandise. And this country has succeeded in creating a tariff wall to shut out foreign merchandise. Naturally this tends to diminish foreign purchases of our raw materials.

I mention the foregoing as one reason that notwithstanding the present buoyant surface aspect, we should not be sure about the future until we understand thoroughly underlying conditions.

It is true there are a number of outstanding business signals that apparently indicate continued good times. Undoubtedly the peak in failures has been passed. There is considerably less unemployment than a year ago when figures rose as high as five million men out of work. Moreover payrolls have increased at an even faster rate.

Money rates are low. We have a grip on the bulk of the world's gold. Security markets have consistently increased in the last two years.

The pig iron output is greater than for three years. Unfilled orders on the books of the U. S. Steel Corporation are 50 per cent above the low point. There is a shortage of freight cars. Commodity prices have advanced in the wholesale markets consistently for a year and a half.

Using these signals as a thermometer, we may arrive at the conclusion that business is good. Used as a barometer, however, in the light of past experiences, what do we find? Unfilled tonnage of the Steel Corporation, although 50 per cent above the low point has decreased since last fall. New incorporations were but little larger than the previous year,

40 per cent below 1920, and 35 per cent below 1919. If business expansion and business development is based on one thing more than anything else, it is confidence. Since the 1920 slump, confidence has not returned in sufficient volume to lead people to invest in new enterprises.

Building as a thermometer looks very encouraging from the standpoint of volume and value. Yet we may be closer to the peak of the expansion than most of us realize.

I have mentioned these various elements with the note of caution in order that we may not be guided solely by surface conditions. I should like to emphasize very clearly that every element in the business structure continually moves in a series of recurring cycles. The thing that we should be guided by is more what the various cycles have in store. This point cannot be over-emphasized. It is in order that we may get the proper perspective of the situation that I have dwelt at length on this point of view.

Another reason for mentioning these points is that while in 1922 the trend of business was in one direction, namely upward, in 1923 it may develop in more than one direction. I said before that the total volume for 1923 ought to exceed that for 1922. Yet, while the 1922 volume represented a gradual increase from the early part of the year, 1923 will probably represent a continued advancing tendency during part of the year, but in all probability, a declining tendency or the beginning of a turn downward before the end of the year. Not-



Sydney A. Linnekin, Wellesley Hills, Mass.

withstanding this volume, the psychology of the people is entirely different when the rise stops.

To illustrate that point, let us regard the question: Do we pay our bills when we have money or when we don't? The real answer is not what it would appear from the surface. Take one of our premier agricultural states. In 1914 this state owed the Federal Reserve Bank twelve million dollars. In 1920 it owed the Federal Reserve Bank ninety million dollars. In this same period farm mortgages increased from 250 to 490 million dollars. This condition existed after five years of highest prices and tremendously increased volume. During the last two or three years, despite drastic declines in the value of farm products, these amounts are slowly but surely being liquidated. In other words, so long as things are on the increase and more money gives promise of coming in rapidly, there is a certain psychological reaction of a buoyant optimistic nature. But as soon as the corner turns, the psychology is entirely different. Business experiences a momentary shock manifesting itself quickly in a sudden stoppage of buying. This condition is far more likely in 1923 than in 1922.

There is one more point I wish to draw out at this time. We feel that we are going through a new period the like of which has never existed before. In its magnitude, that point of view has merit. On the other hand, it may be surprising to learn that the trend of business from the signing of the armistice to date parallels very closely the trend of business following the end of the Civil War. I said at the outset that war excesses would have to be paid for. It was not until the

period of 1873 to 1878 that we finally made the greatest headway toward liquidating our Civil War obligations and getting a new start. It may be quite impossible to state the exact period in which we will experience the greatest reaction from war-time inflation, but being in this period of adjustment we cannot look for any permanent period of expansion at this time.

On the other hand, the outlook offers more immediate opportunities than at any time in the last three or four years. Crops for instance have contributed more than a billion dollars additional to the country's national income than a year ago.

New building was estimated at four billion dollars for 1922 with an added expenditure of another billion for the furnishing of heating and other equipment. That total should be closely approached and perhaps exceeded in 1923.

Mail order houses and chain stores have consistently reported increases in business for months.

Savings bank deposits in the larger cities of the country are again reporting increases. And 175 of the largest cities of the country report a greater volume of business than a year ago.

There are one or two other points I want to emphasize. An economic storm like a storm of the elements does not strike all of the country at the same time. When the depression first became noticeable, it was centered around New England. The city of Bridgeport, for instance, serves as a good



George A. Parry, Boston, Mass.

center. A year later, in 1920, the center of the depression could be pictured in Akron. In 1921, coincident with the collapse of the farm boom, it may be pictured as centered in Des Moines. During the year just past, it may be said to have been centered in the Rocky Mountain states. By the same token, the waves of improvement follow in a like way. This means that New England was the first to show improvement, then the middle west and south. Right now New England promises a 10 per cent improvement in business, the North Atlantic states 5 to 10 per cent improvement, the middle west 10 to 15 per cent. The agricultural improvement will come along more gradually. The cotton states offer the startling prospects of 35 per cent improvement.

The sun therefore is shining somewhere all the time. To make the most out of the present opportunity may mean cultivating new markets for some of you. Even in the 1920 and 1921 depression the volume of business exceeded the volume of business for the previous boom period of 1905 and 1906. Therefore I want to leave with you this thought. The normal prosperity of any nation depends upon the development of its resources and the efficiency of distribution. Only as these two factors are increased can we have more prosperity. One way in which real welfare can be improved is by producing more goods and distributing them **with less waste**. From the beginning of the twentieth century, our economic history has been a continuous improvement in production processes and methods, but on the other hand distribution costs have increased. In view of present underlying conditions and the discomfort-

ing precedent of what must be accomplished before permanent prosperity can prevail, a decrease in distribution costs couldn't be adopted at a more opportune time.

Now I want to refer directly to the topic assigned to me.

Economic history shows that in every period of depression 5,000,000 men are thrown out of work. Fully 90 per cent of them work for 20,000 concerns. With close relationships and interlocking interests, it is safe to say that the destinies of these 5,000,000 workers with their families totaling close to 20,000,000 people, rest in the hands of a few thousand executives.

Twenty million people can't experience hardship and deprivation without a direct, immediate and corresponding reaction on general business—yes, on your business.

Think back with me, if you will, to previous periods of good business. Remember that the magazines write up the lives of a new crop of super-executives who started with nothing and developed over night into business marvels? You will recall some of the men, men whom you previously had not heard of. And, let me add, when the business tide receded, you never heard of them again. This is not idle talk. I have but to refer you to Messrs. Dun and Bradstreet showing heretofore unequalled failures during 1921 and 1922. These men I am referring to simply rode in on the crest of a wave of prosperity, but because they were not grounded on the simple fundamentals of permanent business success, they could not maintain their temporary advantage. So the first essential to a better program for business is for the coming executive to be thoroughly seized in the few necessary basic principles. Already many universities through schools of business administration are striving to meet this problem. In the Babson Institute—operated by trustees as a non-dividend paying institution, let me add—organized under the educational laws of Massachusetts we are making a direct effort along immediately practical lives. You and I have learned considerable from books, but what we have gone through we know. In our resident school we have not resorted to artificial or superficial measures, but we create in a nine months' resident training a practical business environment. We have a standard business and office equipment, we work on an eight-hour schedule; we have business men as directors; we hold conferences instead of lectures; we work mornings in discussion and every afternoon we turn them loose—under direction of course—in a laboratory way into offices, factories and banks. Not to be towed around by the office boy but to go to the highest man available to question him in his methods. We also work on problems of research submitted by business men.

As to what we teach, we take up the few fundamentals of production, finance, distribution and management, linked up with business cycle. We give therefore the essential facts. A fact after all is a human experience. We teach facts that others may be spared the same experience. We have proven that it isn't necessary in business to begin at the beginning than for young electrical inventors to begin where Edison and Bell did.

With our factory space doubled and the foreign outlets greatly restricted it will require experience to solve the problems ahead. This means either your own experiences or somebody else's. We like to feel that through training like this a man can get the experiences of others—especially as we have had the advantage of collecting these principles, through serving thousands of the nation's largest executives during the past twenty years.

For those who are unable to get away for a resident training, we have developed extension courses, duplicating step by step the same material, under the direction of the same staff of directors. Then we have junior courses giving the essence of these basic principles in sugar coated but none the less convincing form for the rank and file workers.

As a second step in the program let me say that each year since 1914 the business leaders of the country have assembled at Wellesley Hills to discuss informally current business problems. The institute is preparing to take over and expand these conferences. Right now we are building on our new campus a large auditorium with a seating capacity of 1,800, the largest auditorium between Boston and Springfield. In addition to the annual conference, we shall hold it open to trade associations for their meetings.

Conventions, according to my observation, are held for two purposes, information and recreation. Located as it is on the highest hill in Wellesley Hills—the only place, by the way, where doctors would allow Mr. Babson six months to live in 1902—and close to the valuable records that have been collected during the past twenty years, we feel that Wellesley

meets both requirements. This auditorium will be ready this summer and aside from our own annual conference we are prepared to offer at no charge, the auditorium to thirty trade association meetings a year for their meetings. I hope some time you will hold one of your meetings there.

The third step is along research lines. We are prepared to train young men individually in independent research in the industry they purpose to enter for their life work. Secondly, we shall offer to trade associations the opportunity to conduct their statistical research either on land for buildings of their own trade or in suites of offices. This spring we shall erect the first of this series of buildings devoted to association's progress. I shall be pleased to supply further details upon request.

You will see that my conception of a program for better business is along lines of education and information—to make the one more practical, to make the other more accessible. I mention the efforts of the Babson Institute because it organized not for profit, but under the educational laws. We are developing a 200 acre campus into a statistical and educational center. We own the land, we work on an endowment, and right now eight new buildings are being constructed and two more will start in April. In addition to buildings for the resident school, research, exterior courses, administration, a postoffice, garage, etc., we shall ultimately have one building for each state in the Union. Finally we shall construct a large map of the United States, larger, I believe, than any in existence. In addition to physical features like mountains and rivers and political features like states and cities, we shall make it a live, practical picture of the nation's business, showing as often as new statistics are received such developments as the planting line, good business and bad business, strikes, fires, new buildings, etc.

Only as more accurate information is analyzed and more widely distributed can we eliminate much of the wide reckless booms and accompanying inevitable depressions that stand out so blatantly on the pages of our economic history. We are dedicating the Babson Institute fearlessly and courageously to this constructive program for better business.

In closing let me first offer you our cooperation.

Finally, to return to my opening thought, let me say that while 1923 is not a time for building up inventories or for undue expansion, yet more money will be circulated than for the past two years or more, the sun is always shining somewhere, and those who have the right goods at the right prices and at the right place will enjoy better business this year than in 1922. I firmly believe your line can unmistakably stand in the front rank.—(Applause).

General Discussion.

President Burton: We are certainly indebted to Mr. Linnekin for this splendid paper. Does any one desire to discuss same?

Will P. Blair: Mr. Chairman, if Mr. Linnekin will permit, I would like to ask rather a mean question. This question of economy, theory of business, etc., has been discussed, as we all know, very widely, both on the platform and in the press, but the business people who are out here and there over the country see the condition. It is our big task, and in our head, it is just about this. I may not be perfectly right, but near enough I believe that every man in the audience will understand.

Every man feels a kind of a cloud coming. Here is what we are in the midst of right now. The industrial centers of production in this country are operating around about \$1.00 an hour. When we pass through the corporate limits of the industrial centers of this country, with two exceptions that intervene everywhere, the price that is paid for mining coal, and the freight rates charge, that are absolutely affecting all business; with the exception of these two, these high prices obtain. In the commercial centers outside and beyond that, instead of \$1.00 an hour, it is sometimes about \$1.50 and \$2.00 a day in the population of this country. How long can that unequalized condition maintain and calamity be averted? I would like for the economist to face that proposition and illuminate us, if he can.

Mr. Linnekin: I would like to very much, Mr. Blair. You

have put your hand on something that is a canker on the root of our business prosperity. You say, "How long can that condition prevail?" I do not believe any economist or individual can answer that question. It is like a sick man; take my own case. When I was younger I had chronic appendicitis. My parents, like all fond parents, said "No, we are afraid of the knife," and time after time they would have me on my back, with a two-pound linseed poultice, to ward off attacks. But finally, Mr. Blair, I had to go under the knife, and it was not long before I had to have another operation before I was well. Business can be operated on like any sick man. You can put hot water to the front of his head, and ice packs to the back, but you have got to cut deep to get to the root of the matter, and the sooner we get down to that the better the country is going to be. We have no basis on which to forecast. In the Civil War it took us eight years to get into the operating room, then four years to get out. In his case, it may take us eight years to get in, and I don't know how long to get out.

Mr. Blair: You have answered it very well, except this one thing. You haven't pointed the date we should send for the doctor. You put it off for a good while. No politician in this country is willing to touch the mining scale, and we are all contributing to the high and unreasonable prices. The



Elisha K. Kane, Kushequa, Pa.

same is true of the freight rates on everything, and the farmer in the country is bearing an uneven share of the load and oft-times saying, "You folks in the cities may go to hell, we are done with you."

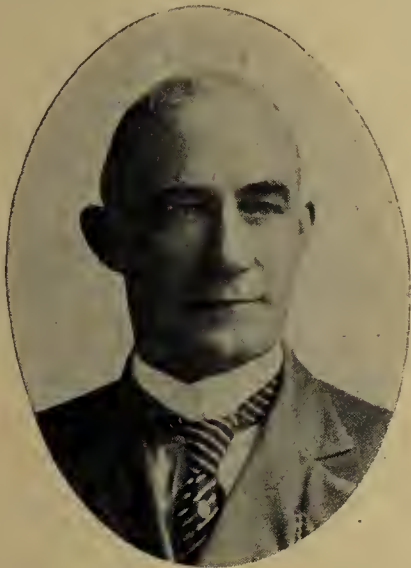
Mr. Linnekin: Who can blame the farmer? I should say, speaking independently of any connection I may have, the thing needed is a better distribution of the few fundamentals of business, economics and religion.

Elisha K. Kane, Kushequa, Pa.: I have got to the age when I can't think of anything going on now without my mind going back to childhood, and that is a long, long way back. About fifty-four years ago my sister and I lived up in the woods, had never been to school, and had no friends but our own family. My sister, of course, played with dolls, and I had to play with dolls, too, for a while. We got too old for dolls, and we had to have paper dolls. My father was in politics, and we heard his talk with my mother. So we got up a dollish republic, woman's suffrage was fully developed at that time. We had a monetary system, in which one cent was one hundred dollars dollish, and we started with the very few pennies we had. I had a little brother, several years younger, who wanted to get in the game, and he found if a banker only had money he could get everything he wanted, so after a while he decided to make money out of paper with his fingers.

He is now rather a famous surgeon, because his fingers are still nimble. If he could only make enough dollish dollar bills he could do what he wanted to. We explained to him he must have a specie basis. Of course he started a bank, and in the bank he had money so he was soon making money just like the Federal Reserve—just the same way Germany is. My sister and I thought it had to stop. One of these things came in '73. We gathered enough of his currency in our hands and presented it for redemption, and took his three pennies, and then told him he could not make any more money, and he began to cry and mother heard us. She said, "Give him back his pennies." The both of us began to show her the injustice of that thing, what he had done and so we had taken his pennies. She said, "It is all very well for you children to have your plays, but when it comes to making the little fellow cry, it has got to stop."

In this nation, I notice this system of statistical work goes at the circulatory system of our National body. There are three distinct systems; there is the digestive system; there is the nervous system; there is the lymphatic system.

I only asked Mr. Randall a while ago for twelve hours in which to speak on this subject, and he did not say whether he would grant it or not. What I want to speak about is I would



D. Warren De Rosay, Corry, Pa.

like to get this statistical system to take into consideration the nervous system as well as the circulatory system. The nervous system, since, after all, it is the brain of man which controls these other things. The digestive system only works for the nervous system; that is what Dr. Bustard spoke of last night. Lowell said, "God stands behind the dim unknown, His shadow keeping watch above His own."

It would be wise to take into consideration when we remember our situation in 1873 and some of the moral conditions. The nervous system had a great jar. In 1872, the people were in rebellion against General Grant's policy, the attempt of Horace Greeley to head the reform forces failed; the circulatory system went wrong. It is well to consider the nervous system was out of order, but about that time the prohibition forces went by the board. Local option went into the South and license law throughout the North, and we were morally wrong. Now we are bursting with money while all the rest of the world is in poverty. We did what we thought was right and our nervous system at the end of the war was in wonderful order. We had attained righteousness at great peril of life and loss of money. We had righteousness when we expelled liquor out of the country. I am most optimistic as to the future. I do not think we can follow the decline that came along in 1873, because of the nervous condition of our coun-

try. The working people are rolling in money, money they have never learned to spend because they were so ground down by the father of the family spending money on booze. Now they are building homes. Statistics show you that ridiculously few people are coming into this country on the immigration system. I think there is great prospect ahead. I think the practical program for business in the future must be based on righteousness.

I would like to make this suggestion in this connection of the nervous system on Mr. Blair's remark; he had in mind the great inequality of labor, and that brings me to the question of the three pennies. We can have our economic system working very nicely. It is all very well for us to have our pennies, but when it comes to making the little fellow cry, it has got to stop. These fellows Mr. Blair describes as getting \$1.50 and \$2.00 are the little fellows and they are crying. I believe the statistical experts should follow the moral state of the country as closely as they do the other. We must make it so that the man who works can obtain the money he is entitled to. As soon as we stop making the little fellow cry, and the little fellow is the married man who has a family to support. He gets the same wage for supporting seven that the single man does. They are trying to keep the woman from working in the same factory with men. I do not know but that the Great Father will come in and say, "It is very well to have your business, but when it comes to making the little fellow cry, it has got to stop." (Applause).

Mr. Linnekin: I am awfully glad to have this gentleman speak as he did. I haven't a one-track mind, but I put down a few notes because he covered quite a few points. One point he did not agree with me, I feel we have got to go through something like we did after the Civil War before business can be good. When you cornered all the currency and made the little fellow cry, you had to give back the specie, didn't you? We are the big fellows, only the little fellow doesn't happen to be the \$2.00 or \$2.50, per day man; it is the millions on the other side of the water. We have the three pennies and he is crying, and we have got to give them up. I feel that is one big reason why we can't have any great expansion at this time.

There is another point I was awfully pleased to have brought out. I agree with the gentleman heartily. Statistics are not everything. They are good in themselves, only as a means to an end. I happened to be brought into a debate in a Boston club a short time ago. The subject was, "Is New England Slipping?" My opponent undertook to show that every other section of the country is developing because new industries are rapidly springing up. The affirmative side had all the statistics and it looked as though I would be put in a corner until I said, as I said just now, "Statistics are not everything, you have got to look under it, and the thing I like that stands out in my mind, is the unchangeable nature of New England character." Statistics are not everything.

Mr. Kane: I do not underrate statistics, only want to try to turn some of the statistics along the nervous system and see the effect on the moral system of the country also.

Mr. Linnekin: After we had been dealing in statistics a number of years, we found we had to watch the attitudes of the people. I do not know anybody who can tell me or you, to our satisfaction, how much inflation we are going to have, I do not know, you do not know, how many times we can go to the bank and borrow. I do not know about you, but when the bank says, "Mr. Smith, that is all," it is a simple matter of mathematics for you and me to know how much we have to pay back and we haven't paid back this inflation. That is the basis on which we borrow. Just look. Half of every period of good business is real prosperity—the rest inflation. Half of every period of depression or deflation is caused by

lack of confidence, dishonesty, unrighteousness. By the same token the first half of the period of prosperity is based on the thrift, the honesty, the industry and the righteousness developed in the last half of the other period of depression. So I am with you heartily.

We have a picture of business. It is simply a black chart; that is the balance sheet of the country. It has a good area above the normal line, and areas below it. We have divided the rest by a little white line. On the inflation side, we have to put a white line. Now after the inflation is over, but when we are below the line, we can come fairly close to putting that line on the chart, showing 51 percent of the people are in the right frame of mind.

The Federal Reserve system, of which you speak, is a fine instrument, for—I do not want to say inflation—but it is a fine instrument in times of good business in providing additional credit. It has, however, no legal or automatic shut-off. There is where statistics step to the front and the righteousness of the man at the head of the Federal system says, "This is the time to grant no more credit." And I want to put in my word in commendation for Governor Harding of the Federal Reserve Board. He is much misunderstood.

Now one word in regard to your currency system. One time, an Austrian, a German and a Russian were in a Swiss



Rufus P. Morton, Princeton, Minn.

hotel. When the time came to pay their bills, the Austrian threw a suit case on the desk and said, "You will find in there enough kronen to pay my bill." The German showed the proprietor a trunk, and said, "You will find in there enough marks to pay my bill." The Russian presented him with a copper-plate and said, "Print up enough rubles to pay my bill."

C. P. Mayer: With all due respect to Mr. Kane and to our orator, I am a little like an orator we had in Pittsburgh. He was usually at his best when he had a little under his belt. We were going to a banquet, and we organized our crowd, and said: "Now, when he gets to talking, we will cheer whether he is right or wrong." So we cheered at every point he made, and that put the meeting in an uproar. One time he wanted to go back to his subject after we had cheered loudly and he had forgotten what he had said because of our tremendous applause. He stood and looked around and wrung his hands and said, "Now, where are we at?" I say now, "Where are we at?" Europe has been mentioned and Ortons' name has been mentioned, and I don't know where we are at. I listen to lectures nearly every week on Finance and the Federal Reserve System, and while I am not afraid of the hereafter that will follow the World War as it did the Civil War, it makes one hesitate. I believe our Federal money system is so elastic we can forestall anything that may be done in the form of a panic. But with the immigration doors closed to

the extent of only about twenty-three percent—so long as we have our immigration doors closed, I say we cannot get labor from Europe. We all know it was once a question of "How long we can work until we produce more than we need in this country and then we must have an outlet." When we work four days a week, we have produced enough to run us another week. The question is will we open our immigration doors, or whether we will shut down two days a week after we have worked four days. We don't need the other two days' work.

I had it in mind to build a modern clay plant costing two or three hundred thousand dollars. We have some funds in bank, and we have decided we are not going to do anything until we see daylight ahead.

Mining has been mentioned. We are in the coal mining business, and we are just now winding up one operation. The question is whether we will open a new one. We are about down to where when the Miners' Committee come to us and say, "You can do so and so with your own investments and your own operations," and we think it is time to quit. That is the condition of the mining business. We must consult the Miners' Committee before we can do anything in our operations. Isn't that damnable in any industry? But you cannot better that condition until you have an influx of labor. Every Congressman knows what he is there for, and when you say we have Europe's three pennies and you must give them back, and Orton said last night we ought to give them back and make a compromise by wiping off part of the debt with France. I want to go on record that any man who recommends giving back any of the European debt is anti-American. We haven't any three cents of Europe. We spent several billion dollars and laid down the lives of thousands of our boys, and I sat down in France on the grave of the son of my neighbor and cried bitter tears, while six of those German guns stood there as though keeping watch over our dead. The longer you keep these scoundrels over there in debt, the longer you will stay out of war. I know I am off the subject, I think any man who makes such suggestions is anti-American. I am sorry I did not get to talk to Colonel Orton before he left, but I have the satisfaction now of saying what I had to say, and as to our economic conditions throughout the country, say so long as the doors are shut against labor supply coming into this country, so long you will have labor trouble.

Mr. Kane: I suggest we try to harmonize Brother Mayer and that anti-American (?) who has a Colonel at the head of his name because during the war he was willing to risk his life, and Mr. Linnekin's idea, and let us see if we will ever allow these Europeans to make some goods and ship them over here so as to relieve our need; then the little fellows over there, and our married man of family over here, who are the little fellows I had in mind, because they will be getting goods to live on. When we get Mr. Mayer together with the others, we will then let these Europeans come here to live. We won't, perhaps, need to hand these pennies to the little fellows Mr. Blair spoke of, but will let them come and play with our pennies.

Mr. Linnekin: There is just one point I would like to make clear. Please do not misunderstand me, I did not intend to convey the impression that I wanted to see Europe's debt wiped out. I want you to understand me on that point.

Mr. Mayer: I did not get that.

Mr. Linnekin: Do not put me in the class with those who want to see Europe's obligation to this country wiped out.

Mr. Mayer: All right, we agree on that.

Mr. Linnekin: Then we are friends. (Laughter).

President Burton: I am old enough to remember things after the Civil War and how we discussed these things. As today, we had to come to the operation, and General Sherman said, "The way to resume is to resume," and we did, and we put our country on the best financial standing in the world. I think most of us understand the condition we are in today. Mr. Secretary, what is the next on the program?

Secretary Randall: The next is a paper on "Ceramic in Saskatchewan," by W. C. Worcester, Professor of Ceramic Engineering, University of Saskatchewan, Saskatoon, Canada.

Mr. Worcester is not present, but he has sent his paper, which I will read for him.

CERAMICS IN SASKATCHEWAN

W. C. Worcester, Professor Ceramic Engineering, University of Saskatchewan, Saskatoon, Sask., Can.

Mr. President, and members of the National Brick Manufacturers' Association:

A short time ago your time honored secretary extended to the writer an invitation to participate in the program of your 37th convention, thus, through his kindness I take much pleasure in presenting to you a short report or review of the work being done in the ceramic world to the north of you, more in particular that portion within the bounds of Saskatchewan, Canada.

Referring to our geographies it is found that the province in question has for its very good neighbors on the south, the States of North Dakota and Montana, from whom it is divided by an imaginary fence, some four hundred miles long, a mere link in the greatest unfortified border lines in the world; and, may this unparalleled friendliness ever thus remain.

To reach the northern boundary of Saskatchewan, one must travel many days through territory, virgin for the most part to the eyes of the white man, and, for that matter to the "Lords of the North," the Crees, as well; these sons of nature are prone to follow closely, with their picturesque canoes, only the open waterways or lines of least resistance, well knowing that they need not wend their way through dense forest and quaking muskeg to obtain meat and clothing. The beaver and other water animals, by nature, live where his lordship travels, while the great moose, elk, caribou and deer must come for drink, thus expose themselves to the marksman.

Standing at last at the northern borderland one becomes entranced and mystified at the gorgeous display of Northern Lights, at times, shooting across the heavens as flashes from a gigantic search light, while at others, slowly drifting as soft as fleecy banks of rainbow colored clouds, seemingly so near that one only has to reach out the hand to touch.

During the past two years the writer, while on reconnaissance survey work in the hinterlands of Saskatchewan, not only had the pleasure of studying the native Cree and his "Movies," Aurora Borealis, of colored grandeur, but examined and recorded many deposits of rich ceramic materials, materials that will prove the foundation of some of the greatest industrial plants of the morrow.

However, we must come back to our subject, because you, as present day clayworkers are no doubt more interested in learning of the clays and their development in that portion of Saskatchewan at present tilled or cultivated by the hands of the white man. When told that the population of the province is but 757,500 scattered over 241,310 square miles, (about the area of five of your states) you can readily draw your own conclusions as to the problems confronting the clayworkers of Saskatchewan; notwithstanding these, the writer is safe in saying that while the people of this new country are small in numbers they have that true frontier spirit of progressiveness, no problem is too hard, set backs have come, and may come, but, each in turn adds greater determination to succeed.

The country is large, thus the aims and views of its people, are, and must be, in accord; the man of narrow limitations as to mind or pocket book soon sinks, or, is swept along as chaff by the ever surging tide of progress.

Undoubtedly the greatest natural resource, after coal in the province of Saskatchewan, is clay, its development has been limited to a few favorable points nearest the centers of population, or in other words, in the southern portion; however, prior to the war, during the boom days of the "last Great West" brick plants sprung up like the proverbial mushroom, little thought or attention was given to such matters as the testing of clays, as to the demands of the market, fuel supply or even to find out what amount of money would be required. It was only natural that many of those embryonic plants wilted in their infancy, others struggled along in a hand to mouth manner until at last the hand palsied and no longer was able to keep the festive wolf from the door, a few of the more conservative have survived.

As in other similar cases, history repeated itself, the investing public became alarmed at the clay industry and

stampeded, diverting their funds to other channels and even to other countries; who could blame them under the conditions?

Among the more leading minds of the province at the time was the minister in charge of the Bureau of Labour & Industries, the Hon. C. A. Dunning, now Premier, who has steadily been a staunch supporter for the development of the country's natural resources. Mr. Dunning, realizing full well the great wealth locked up in the clay deposits and their ultimate economic value, started a movement to not only have a study or survey made of the clay resources, that future investments could be properly guided, but to render all possible assistance to the existing clay products plants of Saskatchewan, by providing ways and means to test their clays, to assist in the working out of their problems, promoting the use of their wares and to eventually have technically trained men for the industry. In other words to place the clay business on a footing that would command and hold the attention of the financial interests.

The plans of Mr. Dunning were brought to a point of reality two years ago through the employment of a ceramic engineer by the Bureau of Labour and Industries, of the Saskatchewan government and the opening up, at the University of Saskatchewan, of the first ceramic school in Canada.

The duties of the director of the ceramic department to be divided between that of instructional work, making a survey



W. C. Worcester, Saskatoon, Sask., Can.

of the clay deposits and acting in a consulting way to each and every clay plant in the province when so desired, all salaries and laboratory expenses being borne by the provincial government.

In a measure the work corresponds provincially to the work now underway by your national government. To the writer's knowledge none of your individual states are rendering a similar assistance to your industry. It is quite possible that in view of the large number of clay plants in the majority of your states, and the excellent organizations that you have, such as the common brick, the face brick, paving brick and other associations, that a similar work to that of the Saskatchewan is not feasible or really needed.

However, in a new country where every thing is relatively in its infancy, many things other than the traditional, must be and are undertaken successfully; for example: in the great railway systems of Canada a certain type of refractory ware is used in the locomotives, all of which has, in the past, been imported, annually depleting Canada of many thousands of dollars. In the provincial survey of the clays excellent grades of fire clays have been found, from these, bodies have been prepared and tested until one of similar properties to those of the imported locomotive lining was developed, full sized pieces were then prepared in the ceramic laboratory and finally placed in actual test under working conditions alongside of the standard imported goods, the results have proven favorable beyond the greatest expectations, thus the way has been opened for the building up of a large refractory industry in Saskatchewan, and the saving to Canada of many thousands of dollars.

Similar work is being done with the pottery, stoneware, sewer pipe clays as well as on those for building and paving brick. The number of plants in Saskatchewan at present does not exceed a score, one only is making hollow ware, another face and fire brick and the balance building brick exclusively. During the past year Canada imported over ten and one-third million dollars worth of clay products, largely of the refractory and structural types; thus with the assistance being given the industry by the Saskatchewan government the field offers decided attractions, especially is this so in view of the fact that the estimated coal within the bounds of the province reaches the enormous figure of 50,000,000,000 tons, surely a sufficient amount to meet the demands of the most critical.

Western Canada, like most other new countries, has been hurriedly and cheaply built for the most part; the pioneer was not only glad, but, obliged to build his home of sods, cut on the open prairie. With the crossing of the continent in the early eighties by the great Canadian Pacific Railway it became possible for the homesteader to purchase lumber, then, by means of a saw and hatchet combined with his own ingenuity, he was enabled to construct a more pretentious home, known as a shack.

The country has prospered since those days, towns have sprung up and thus a demand for better building materials created; with the great abundance of good clays on every hand the clay products industry is at the very dawn of its career in Saskatchewan. Original frame buildings must give way to those of brick and tile, while all new work will quite naturally be built of those materials.

In view of what is known of the clays within the province the writer is quite safe in making the statement, and has every expectation of seeing its fulfillment, that Saskatchewan as a clay producing province will eventually hold the rank in the Dominion that Ohio or Pennsylvania does in the United States.

Before closing I must add that the clay workers of Western Canada, whom the writer is proud to represent, are not at all unlike yourselves, they have had a hard battle to wage and have proven true to the craft, in that they are willing to fight the battles of an industry so ancient and honorable as that of clay. Furthermore they take your leading clay journals, and for the most part are using your machinery and methods, in other words, they are working elbow to elbow with you in the winning from mother earth, that everlasting building material clay, that we and our posterity may have for all time, safe, healthy and permanent homes.

I thank you. (Applause.)

Secretary Randall: We have a very interesting paper here by an old-time member who expected to be here and renew old acquaintances.

THE MISSION OF BRICK.

Ralph E. Sunderland, Toledo, Ohio.

Mr. President and Gentlemen, of the National Brick Manufacturers' Association:

It would be well if all of us could occasionally change our view-point. Especially would it be well if we could accurately consider our own activities and problems in the light of outside rather than inside facts and conditions.

For many years the 'mechanics' of making and marketing brick interested me and my close attention. In that phase embraced in the manufacture of the product, mine has been the position of an observer of the experience of others. In the matter of selling brick my activities have been personal, real, definite.

Here today are gathered the brains, the capital, the summed-up, the composite experience of the brick industry of this country. For me to bring a message of actual value has seemed an improbability; and yet I much desire, for the sake of old-time associations; for the sake of translating my well-wishing into helpfulness, to add something to the achievement of your fine purpose.

The brick business has an honorable history, a worthy record. All enduring benefits arise from the noble purpose of those who create them. Useless, is it, to voice the wish that more and better things had been accomplished through the years gone. Useless, indeed, unless that implied regret is based upon earnest desire and determination to profit by omissions; to find better ways; to define the true mission of brick in the social scheme and drive straight through to its full achievement.

To you, manufacturers of brick, the practical problems of production may well be left. Your losses and your gains tell, in part, the story of your wisdom as business men. Plants have come and plants have gone. Methods which were once called 'advanced' came later to be regarded as 'obsolete'. Products which, for a time, seemed to meet a real need had to give way to a different type.

Little, if any, attention was given to that expensive thing called 'obsolescence'. A machine which, one day, was regarded as the acme of economy, efficiency and excellence, was soon more than offset by another of better service-value in the hands of the competitor. Was any part of the earnings set aside to cover such a contingency? Or were the apparent cost and the apparent profit all that were thought to be worth considering? The clay was gone; the labor gone; the capital gone; the transaction gone; all without leaving behind that essential thing for tomorrow—preparedness for the next transaction—the constructive building of the brick industry on a firm and lasting foundation. Of what use is a 'mission', a big purpose, without the workable plans and the substantial equipment for carrying it to fruition?

In the back of my head is an abiding interest in brick. For a few recent years it has remained a sort of subconscious interest being held from activity by the crowding of other different lines of thought and work. Devoted, as I am, almost wholly, to matters of human health as expressed in my present work, it is not illogical that I should now be thinking about the 'health' of the brick industry. It was a large and appreciated compliment to be again invited—this time as an outsider—to come back to my old friends—



William Burgess, Toronto, Ont., Canada.

to my old love—and again collaborate with you in this convention. I am glad to be here; glad to express my interest and pleasure.

To me the thought of a worth-while 'mission' naturally suggests two things: first, to define that 'mission'; second, to discuss means for its fulfillment. The 'mission of brick', it seems to me, is that all clay products (in the sense that this convention represents them) shall rapidly come into utmost popular favor and use for all appropriate purposes.

Great progress toward this end has been made; but the ultimate possibilities lie ahead; how far ahead depends upon the speed and wisdom with which the brick industry moves. Many of us remember when 'a brick was a brick'—and nothing more. Occasionally one was honored by encasement within a rag of carpet and used as a door-stop; but even for that distinguished service the chosen brick required no special qualification. And can you not imagine how much more popular 'bats' would have been for use as 'Irish confetti' if only nature and fire had made them green?

Do some of you recall your convention at Louisville, many years ago? I recall it partly because of the stage fright occasioned by trying to deliver a constructive message about the need for suitable brick advertising. It would seem silly for me to claim credit for any considerable part of the great effective industry program of advertising which has since that time done so much for the brick industry; but the fact remains that the present popularity of brick, at least as an exterior material, is due largely to subsequent advertising and constructive salesmanship. For with public attention

and interest directed to the possibilities of artistic brick exteriors came a demand for such experimental products as would otherwise, have been unsalable, as they always had been. And being unsalable could not have been profitably made. Today the choicest and most expensive and, better than all, the most profitable types of brick are but the culls and rejections of a former day.

How well this shows that the public can be led to use, to its own great advantage, just that product which you men can most profitably manufacture! Where is the old-time dry-press gray and red and buff face brick, sorted to match like beautiful eyes? Costly beyond computation was the extravagant notion that every gray brick must match every other gray brick that was to enter the wall.

What about those that did not quite match? The seconds; the thirds; the off-color culls? Worth but little to the manufacturer because he had destructively created a popular belief that they were undesirable—that every brick, to be marketable, must be exactly like every other brick. And that very waste made it necessary to charge exorbitant prices for those which were acceptable. It was in part the resulting high cost of such brick which opened the door wide to substitute materials.

Where is really artistic brick beauty today? Is it not found in the brick wall possessing shades and tones and colors and textures resulting from the use and practically the entire product of your kilns? Publicity and salesmanship have done this.



Thomas Kennedy, Swansea, Ont., Can.

Imagination is ridiculed by the foolish and followed by the wise. Can you see in your own pile of rejections and waste a wonderful looking wall? Can you transfer the imaginative image to the mind of an architect and builder? Will you permit a couple of personal experiences? Quite by chance, many years ago, I saw a small piece of accidental beauty in a brick foundation. There was no regularity of shape; no studied matching of color; no anything to which anybody had become accustomed. A nearby brick yard owner had, generously and cheerfully, permitted a workman to haul away and use a few loads of his clinker waste. This he wove into the surface of his foundation walls. The result impressed me.

A few years later an artistic sort of woman of my acquaintance was planning a beautiful new residence. She wanted something unique, something different, something truly good looking, something which would harmonize with the nature of a rugged landscape. Her earnestness and helplessness interested me; for she had said no one seemed to think as she was thinking and none sympathized with her purpose to accomplish a worth-while result which must, of necessity, be out of the ordinary. I recalled that foundation and painted the picture in her imagination. She commissioned me to help her execute the idea. On a dump pile in a Kansas brick yard I found the colors and the texture for her picture. The brickmaker pitied my 'state of mind'

and almost refused to let me pay for the labor of recovering that rubbish—especially because it was a favor to have it removed. The freight could not be computed in the usual manner—the cars be specially weighed. The delivering teamster declined to haul the stuff on a 'per thousand' basis—it must be 'per hour.' The bricklayer would not estimate the cost of laying up that mess of stuff—nor did he know how to go about it. Being in that far, I had to stay in, even to directing the work. But a wonderful wall resulted. Perhaps the beginning of a new era of 'texture and multi-color' which was to revolutionize the face brick—the whole brick—industry.

Why had not the brick manufacturers—from the inside—developed a demand for this excellent, but theretofore wasted, material? The answer to that question will answer all of the questions as to profitably marketing the whole product of your kilns.

I went into a brick plant near Sioux City, many years ago, to make accustomed arrangements for a supply of sidewalk brick. A big pile of 'seconds', possessing unusual color-beauty and texture, caught my eye. I bought them for a song. They built, at Omaha, some very fine looking structures and my profit was not small. They started a demand which made a market for such 'seconds' at prices much higher than the 'firsts' formerly brought. But the big fact is the accident of that discovery saved that plant from financial ruin by providing the way to market its whole product at a profit! Ancient history, you say? Do principles ever die? The 'mission of brick' is to create a healthy demand for all worthy products of your kilns; and this is so today no less than it was fifteen or more years ago.

Glimpsing all of the significant developments in the face brick business since the years in which these incidents occurred, I am more and more convinced that the future holds changes and betterments and opportunities toward which the dreamer may well let his dreams run. For the dreamer always paves the way. Constructive imagination always leads the way to success.

Have you as an association or as individual manufacturers a fellowship in some great technical, scientific, experimental institution? Are you finding how to do new things in line with your opportunities? I have a close friend whose business relies much upon chemicals and chemical processes and results. He maintains an expert in the Mellon Institute at Pittsburgh. That expert's whole time, plus any or all of the equipment and collateral wisdom within the Institute, is available constantly for a study of the possibilities beneficial to my friend's business. It has made him a lot of money. It has made him a leader in his line of business.

A great building era is about to open. Shall the brick industry lead or follow? Shall it eat at the table or take the crumbs? The decision must come from within your ranks.

I have been thinking of you lately in connection with the great amount of highway construction. Perhaps my travels have happened to be in wrong places; but everywhere it seems to be concrete, asphalt, bitumen, etc., with only an occasional brick surfaced road. Why is this? Has it anything to do with publicity? Or is it that brick is not a good road material and therefore is not entitled to this vast volume of business? Neither you nor I will admit this premise; for what material has ever proved the equal of high quality paving brick? Is not brick an old, honored, well established material? There must be 'something rotten in Denmark' when good old 'paving-brick' must step aside to let the procession pass!

What have you to answer—what is your word to America about road building? What do you authoritatively say to highway officials to support your claims for brick? Why are newspapers silent about the advantages from using good brick for highways? Have you not a 'mission' right here? Have you, within your organization, that degree of cohesion without which not industry can fight and win?

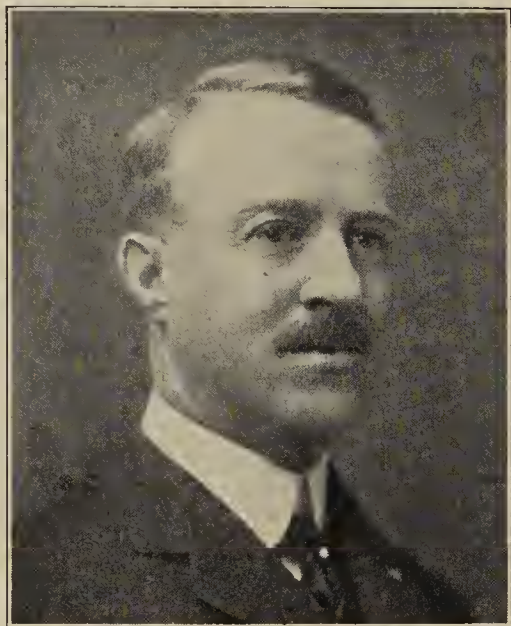
Cement—concrete—is talking its way into approval of millions, while brick is hauling its humble loads over highways built of that competitive material. The imagination of the public must be flamed. Facts must be poured into the minds of every person old enough to know the importance of durable and safe roads; and into the minds of those who are not yet old enough, for they will decide tomorrow's matters. The approval of brick highways must be earned by diligent effort wisely applied.

What have you to say to offset the 'great white way' advertising of the other road materials? When you motor

along a country highway after dark and have difficulty locating the pavement's edge because of its black or dark (non-reflective) color, do you wonder the public responds with approval to the 'safety' claims of white road proponents?

Your headlights will 'pick up' the slightest white reflective substance, thus helping you to guide your machine. If the whole road is white or light enough to respond definitely to your road-lights, there is a road quality of real merit and strong public appeal.

But suppose the paving brick men should set forth and prove their claims that a brick surface is in every other respect the best that can be placed on a suitable concrete base. What answer have you to the 'great white safety' appeal to your competitors? Why not advocate a brick highway with a white concrete edge or curb and a concrete longitudinal strip through the middle? The main road surface—the bulk of the material—would be brick. The white edge would furnish guidance through its reflectivity. The center strip would do likewise plus tending to keep motorists on their own side of it, thus reducing accidents. The claim could even be made and well supported that the very contrast between the red or dark body of the road surface and the white concrete lines—center and edge—would be seen more quickly and clearly than if the whole surface were white. Then there would be real beauty in such a high-



William N. Durbin, Anderson, Ind.

way. Witness beautiful red brick walls of multi tone or trimmed with light or white terra cotta or stone. And the endurance should be maximum because the body of the road—the brick part which is the best—would carry almost all of the travel, the edges being quickly discernible, would be avoided intuitively and it is well known that the first and worst wear upon the highway is at the edges.

This is not especially a paving brick convention; but some of the manufacturers of that product are members of this association and so these comments seem appropriate. But the main purpose of injecting this idea here is that the brick industry as a whole is in competition with brains and capital not at all anxious to increase the use of brick. The mission of brick is to make its proper place in the world and hold that place against all comers. Manufacturers, you can learn much from those dealers who have to please the building public. Dealers, you can strengthen your selling efforts and increase your profits by knowing the manufacturer's stock, his facilities and his problems. 'Passing the buck' used to be a great sport in the brick business. But persistent 'bucking the pass' has shown each side the futility of inharmonious relations. Much of the destructive friction between maker and dealer has grown out of the policy of each making the other sacrifice much of his profit. It would be bigger and more lucrative to join in a mutual and true effort to protect each other in his rightful profit. Each is entitled to a fair profit. He is truly unwise who denies it to himself or to the other fellow. The greatest possible success in the brick business can come only as the result of constant and

conscientious application of sound business principles and judgment.

Make better brick if they can be made. Charge what they are worth. Tell the world about them. Then keep this cycle revolving with increasing momentum.

I feel a sense of security in being an outsider, not afraid of the after effects of anything I might say. But my sincere wish is that every unit in this oldest of all industries shall contribute its constructive part toward the great 'mission of brick' and thereby profit in generous measure. (Applause.)

President Burton: Has anyone else anything to say on this subject, or any questions they desire to ask? If not, we will pass on to the next.

Secretary Randall: The next subject is "The Gas Engine as a Power Maker." Mr. W. N. Durbin of Anderson, Ind., an old-time member of the Association, prepared a paper on this subject, but he has been called home. He left the paper with me to read for him.

ECONOMICAL POWER FOR DRIVING CLAY WORKING MACHINERY.

W. N. Durbin, Anderson Indiana.

Mr. President and Gentlemen of the Convention:

There comes a time in the lives of all progressive brick manufacturers when cheaper power for operating becomes a vital question. For the past five years we have been waiting patiently for coal prices, freight charges and labor cost to come down, but instead, they have either stood still or climbed higher, until at this time there seems little hope for cheaper power by old methods.

Some planned to escape the high cost of steam power by substituting electricity. Since the cost of manufacturing electric power has advanced about with coal, central stations have raised their rates approximately in proportion to the cost of coal until now there is as much dissatisfaction over the cost of electric power as steam power.

Within the last six years we have witnessed the steam engine for driving ocean going crafts driven almost off by the rapid introduction of internal combustion oil engines.

In the later years of the war the situation got to where steam engines could be taken off a ship and new oil burning oil engines installed and paid for out of the saving effected by one round trip from America to Europe.

This situation has affected such a revolution in power for driving ocean vessels that today practically all vessels are being equipped with modern oil burning internal combustion engines. Steam vessels attempting to operate in competition with them are finding it most difficult to compete until now it is generally admitted that the ocean going vessel of the future will be oil propelled.

While it is true that the stationary oil engine for operating on land has not been pushed to the front as rapidly as took place on the ocean, we are approaching a similar revolution in methods of producing power on land.

Within the last five years wonderful progress has been made in the development of stationary oil engines from 20 to 2000 horse power. In the larger sizes, say from 325 to 2000 horse power the full Diesel oil engine has been the favorite, whereas in smaller sizes from 20 to 325 horse power, the favorite is the medium compression solid injection two cycle oil engine of a simpler and cheaper design.

Owing to the fact that the medium compression simpler types can be installed at a first cost approximating a steam plant and that they are simple enough for the average operator to understand, manufacturers of this type have about all the business they can possibly take care of.

It is not fair to judge a modern oil engine by the records made by the earlier types of oil engines, because improvements in recent years are so great that one is almost ashamed now of designs brought out as late as five years ago.

There is about as much difference between a modern oil engine and one designed five years ago as there is between a modern automobile and one brought out ten or twelve years ago.

A good oil engine properly installed will do anything that a steam engine will do and be every bit as reliable. It will occupy about one-fourth as much floor space, can be started in about three minutes and will operate continuously on the

same quality of fuel oil as is usually used in burning brick in place of coal.

In such an engine seven gallons of fuel oil costing on an average of five cents per gallon will produce 100 horse power of smooth steady power over a period of an hour. In other words, 100 horse power for an hour at a fuel cost of approximately 35c which is just about what one pays for labor to shovel coal and ashes about a steam plant.

Furthermore one is not bothered with hard water problems, licensed engineer, boiler explosions, and the delay in getting up steam. These and many other advantages are some of the reasons why the medium size steam plants seem destined to be replaced by modern oil engines.

Progressive brickmakers who are paying over 1½c per K. W. hour for electric power or over \$1.00 per ton delivered for coal will do well to investigate oil engine power.

The time is here when to survive competition one must economize in power as well as in other items entering into the cost of manufacturing bricks.

In conclusion, permit me to say that power can be generated in the cylinder of an oil engine cheaper than by means of any other prime mover. This basic truth will assert itself with increasing force, and when understood and universally accepted will save this country every year a sum large enough to retire the national debt. (Applause.)

Secretary Randall: These other questions were all sent in by someone who was desirous of obtaining the information asked for, but if there is no one here prepared to discuss them, I think we may take up the Report of the Committee on Resolutions. Mr. Julius Lucktenberg of Ashtabula, Ohio, who is chairman of the Committee, received a telegram a little while ago that one of the men at the plant had been seriously injured, and he has had to hurry away, and has asked me to read the report for him.

Report of the Committee on Resolutions.

Mr. President and Gentlemen of the Convention:

We, your Committee on Resolutions, beg leave to submit the following:

PETITION FOR RE-ORGANIZATION AND FORMATION OF COMMITTEE ON STRUCTURAL BURNED CLAY PRODUCTS.

To the Executive Committee,
American Society for Testing Materials.

Gentlemen:

The undersigned, representing the producing interests of the Structural Burned Clay Products Industry of this country, respectfully submit for the earnest consideration of the Executive Committee, their judgment and desire concerning the relationship of this industry to the Society for the purpose of securing at your hands a more efficient formation than now exists under the present organization of committees, by which the industry can function with greater satisfaction and serve its purposes and those of the Society more perfectly.

We respectfully represent that the structural material manufactured from clays, embraces a wide and varied use and that up to this time the proper adaptation of the products to the varied uses by which the public might benefit, have not reached an understanding commensurate with what is possible, and the public therefore is without a very great and vital advantage which might be made possible through agencies of properly constituted committees of this Society.

By reason of the lack of this information, the commercial advantage to the industry is obstructed in progress and advancement. The avenue of usefulness on the part of the American Society for Testing Materials is closed by just so much as its committees are hindered and delayed by a lack of more efficient organization than now exists.

There is not now, nor can there be maintained, that numerical balance between the producing and consuming interest in keeping with the constitution and spirit of the Society, and so necessary to best accomplishment, so long as competing materials have representation on the same committee.

Committee C3 as it now stands, not only exercises jurisdiction over brick, but has brought to it, certain structural materials in likeness of brick, composed of lime, cement, sand, etc., which are in active competition with brick. The logical relationship is that of competitors and naturally leads to the

rivalry for commercial advantage to each one of these materials. The process becomes obstructed and antagonistic to the real purposes of the Society which are for the promotion of knowledge of the materials of engineering and the standardization of specifications and methods of testing. The fundamental object for this activity, it will doubtless be agreed, is for public benefit. Instead therefore, of the machinery to develop this vital purpose by reason of the competitive relationship, there has grown up in the committee as at present organized, a natural and logical activity of sparring for commercial advantage. We believe that no purpose is served by having the committee embrace membership who have neither interest nor knowledge in the material about which and over which they are expected to exercise expert knowledge, out of which specifications and methods may be developed for public advice.

There are men sitting in Committee C3, who are not only not consumers of brick and who are not manufacturers of brick, but whose interest is entirely antagonistic to the use of brick, and whose logical interest lies in preventing their manufacture and use. Under such conditions the Society's opportunity for good is not only useless but injurious. These existing relations are such as discourage the usefulness of the Society in promulgating the mutual advantages to users and manufacturers and to encourage the use of other agencies for such purposes.

Other branches of the Structural Burned Clay Products in-



B. W. Morris, St. Louis, Mo.

terests are likewise subject to similar relationship in their committees, greatly to the disadvantage of the respective production. Freedom of discussion, stimulated by confidential relationship and knowledge of its product and uses necessary to the development of the best service is repressed. The presence of unsympathetic influence disastrously affects the vitality and life of any committee in the Society.

The organization and jurisdiction of subjects of the General Committee "C" now existing, together with a like exhibit of the organizations of sub-committees thereunder, handling various Structural Burned Clay Products, are filed herewith and made a part hereof.

Wherefore, your petitioners, representing the various interests of the Structural Burned Clay Products Interests of America, respectively petition the Executive Committee of the American Society of Testing Materials to form a "Structural Burned Clay Products Committee" which shall be directed and empowered to form sub-committees which shall have jurisdiction over the several interests of your petitioners.

Whereas, the foregoing memorial and petition represents the wishes of this organization as vital to the interests of the clay products industry of America as well as the public welfare.

Resolved, We therefore urge upon the Executive Committee of the Society of Testing Materials, a compliance of the petition as therein set forth and direct our officials to so petition.

Secretary Randall: Before we take action on this resolution, it may be well to say for the benefit of those who are informed, this organization carries membership on Committee C3 of the American Society for Testing Materials. Mr. Blair is a member and I am another, and it is with a view of getting this Committee reorganized so we may operate independently of other factors in the building or structural world, that this petition has been prepared. I move the adoption of the resolution.

Mr. Clippert: I second the motion.

President Burton: You have heard the resolution and the motion. What is your pleasure?

Mr. Mayer: I think there is a screw loose somewhere in that committee. It should be corrected. If there are persons on that Committee that do not belong there, I say "Out with them." I think our representatives on the Committee are amply able to take care of it, and if in their opinion reorganization is necessary, we should stand by them.

Mr. Blair: Just a word for information on that point. We have been trying to formulate standards in Committee C3 for about three years, by the aid of such men as Prof. Orton and Dr. Bleininger of the Bureau of Standards, and what humble



Charles F. Clippert, Detroit, Mich.

service some of the rest of us could give. We have made progress. The American Society for Testing Materials has a wonderful influence, especially in the eastern half of this country, and throughout the world. It was created for the purpose of creating standards about twenty-five years ago, and early in the game, Prof. Orton initiated the organization of Committee C3. At the time when cement was not used very much, and then came in the sand-lime brick, etc., and the Executive Committee of the Society said we will send you into Committee C3, and this Committee has been built up in that way, and we have had so much contention with manufacturers of sand-lime brick, and the Sewer Pipe Committee has experienced the same thing, because the cement sewer pipe comes in there, and they are going to sign this petition, and the hollow tile people are going to sign it, and the drain tile people, all the organizations interested in clay products, hoping to better the condition. Last June at Atlantic City, we made up our minds we were tired of that sort of obstruction, so we want to petition the Executive Committee of the American Society for Testing Materials to reform our Committee, so it may be composed only of men who are interested in clay products.

Motion carried.

Secretary Randall: The next is a Resolution in Memoriam.

IN MEMORIAM.

Whereas, Our ranks have again been invaded since our last meeting and death has removed from our midst the following members:

J. Wheaton Stone, New Haven, Conn.
Frank L. Stiles, North Haven, Conn.
H. S. Renkert, Canton, Ohio.
Charles J. Deckman, Cleveland, Ohio; and

Whereas, This association, through their deaths, has sustained a great loss; therefore be it

Resolved, That as a fitting tribute to their memory, the deep sympathy of our entire membership be extended to the families of the deceased; and

Whereas, Charles J. Deckman presided over this body as its president, and death has stayed his guiding hand in up-building and assisting in the progress of the clayworking industry, this organization is keenly sensible of the fact that an irreparable loss has been sustained; and, therefore be it

Resolved, That as a special mark of esteem this entire membership by a silent rising vote pay its greatest respects to this departed past president, Charles J. Deckman, and the family of the deceased be notified of the action taken.

The convention stood in silence for a moment.

Secretary Randall: The rest of the resolutions are of acknowledgment and may be lumped.

THE CONVENTION A BIG SUCCESS.

Whereas, This, our Thirty-seventh convention, now drawing to a close, has been one of unusual interest, and our deliberations have proven very instructive and pleasant; and

Whereas, The members and guests of our Association have been shown most kindly consideration and attention by the management of the Hotel Winton, which has afforded us exceptional facilities for all of our sessions and functions; therefore be it

Resolved, That the sincere thanks of the National Brick Manufacturers be tendered to David Olmstead, our genial host, for his unceasing personal attention; and be it further

Resolved, That an earnest vote of thanks be extended to all those who have contributed papers and addresses and also to the officers and members of Committees who have done so much for our craft, and made possible in a large measure the success of this meeting.

Respectfully submitted,

JULIUS R. LUCKTENBERG, Ohio,
JOSEPH T. BYRNE, Pennsylvania,
THOMAS KENNEDY, Canada,
L. P. ISAAC, West Virginia,
WILLIAM C. MITCHELL, Missouri,
J. F. REYNOLDS, Connecticut,
JAY TERRY, New York,

Committee.

Mr. Penfield: I move the adoption of the report as a whole.
Seconded by several and carried.

President Burton: What is next in order, Mr. Secretary?

Secretary Randall: We are now under the head of Miscellaneous Business. We have a number of letters and telegrams from absent members which I am sure those present will be glad to hear. One in particular is from Ryland H. New, President of the Canadian National Clay Products Association. I met with them several weeks ago, and they paid great attention and courtesy to those of us coming from this side of the line. Also have a telegram from Dr. Albert Bleininger, Chairman of our Committee on Technical Investigation. He promised to have an unusually good report from the information obtained from the questionnaires sent out sometime since, but he is ill and will probably get his report in the printed proceedings.

GREETINGS FROM ABSENT MEMBERS.

T. A. Randall, Secretary, Hotel Winton, Cleveland, Ohio:
Regret exceedingly impossibility of attending convention.
Newell, W. Va. A. V. BLEININGER.

From Little Rock, Ark.

Impossible for me to attend convention on account of press of important business. Hope you have a record-breaker.

W. W. DICKINSON, JR.

From Washington, D. C.

Here's wishes for best ever convention. Sorry I cannot be with you.

JEFFERSON MIDDLETON.

From Toronto, Ont.

Sick in bed and regret not being with you. Kindly cancel hotel reservation. Best wishes for the success of the convention.

RYLAND H. NEW, President,

Canadian National Clay Products Association.

Regards from An Old Member.

My Dear Randall:

I am sorry to say I cannot attend the convention at Cleveland. I had counted on being with you, for I know I would get much pleasure in meeting our old friends. I am well and busy, and trust you will have a fine convention. Regards to all my old time friends.

Sincerely,

Middletown, Ohio.

W. A. EUDALY.

Best Wishes for Continual Success.

Dear Mr. Randall:

I have your of the 16th and thank you for the kind thoughts as expressed. I find that it will be impossible for me to attend with you and our other dear friends during Convention week at Cleveland.

Please give to each one who may remember me my assurance of perpetual personal esteem, and my sincere desire for the continued success of our loved Association, The N. B. M. A.

Very truly yours,

New York, Jan. 19, 1923.

WM. K. HAMMOND.

Been a Member Thirty-four Years.

Dear Teddy:

Your circular letter of 17th received. I am sure you will have a splendid time as well as a profitable one. Should enjoy being with you. I have attended two conventions in Cleveland, you could not select a better place for a good size convention, so near the center of the clay industries and the state of Ohio leads them all. It is now thirty-four years since I joined the N. B. M. A. It was the third convention held by the Association. Few have been a member so long a time. There are none I can recall excepting yourself and I think Miss Wallace.

In this convention I wish you the greatest success and the most beneficial of any meeting yet held. You know I am now outside the breastworks but with you in spirit and good wishes. Remember me to any inquiring friends and best wishes for its success. Mrs. Rogers joins me in kind remembrance to you and your family.

Sincerely yours,

Albany, N. Y., Jan. 22, 1923.

W. H. ROGERS.

Charter Member Sends Greeting.

Dear Theodore:

I have your several letters relative to the convention, and the only reason they did not receive prompt attention was because I was not able to authorize you to secure room at the Hinton for me, so I could be one of the first in the Convention Hall, as of old. Being a Charter member and an honorary life member there is no one under greater responsibility

to attend our annual conventions than myself. But unfortunately, circumstances are such we cannot come this year, much as we would like to. Mrs. Ittner joins me in kind regards to you and your dear ones, also to all of my old friends and associate members of the Association. Wish our Association might meet in St. Louis again soon.

Yours very truly,

St. Louis, Mo.

ANTHONY ITTNER.

Ex-President Sends Regards.

Dear Mr. Secretary:

I was West all last week on paving brick matters and find your letter on my return. Owing to having been away so much it will be impossible for me to leave here this week. It was my desire to attend this convention but I find it necessary to change my plans. I am sure you are going to have a fine gathering and am sorry not to be with you.

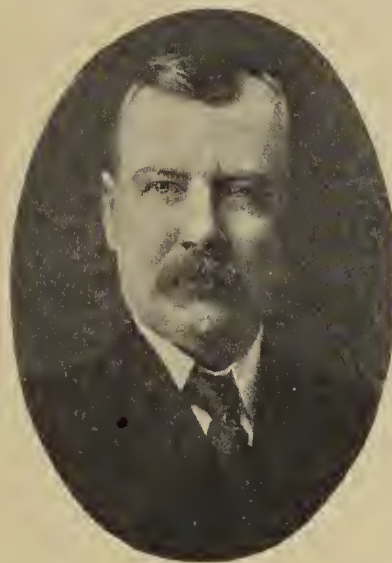
Very truly yours,

EBEN RODGERS.

Detained at Home by Illness.

Dear Randall:

I regret very much that it will be impossible for me to attend the convention on account of indisposition. I have



J. F. Reynolds, North Haven, Conn.

been laid up for the past two weeks with la grippe, and have not regained my strength to sufficient extent to attend this meeting, which I regret.

Please present my respects to the meeting, as well as my regards, and with best wishes for a repetition of our usual interesting and instructive meeting. I remain,

Macon, Ga.

W. E. DUNWODY.

Votes for a Southern City for Next Convention.

Dear Mr. Secretary:

Although I am not with you and the many friends I will have at the N. B. M. A. convention, still my thoughts will be with you all. Please give my kind regards to the friends who may inquire for me. Tell them I hope I will not do it again, but will be with you all at the next convention wherever it is held. I think New Orleans or Florida would suit me. The thermometer here only showed ten degrees above this morning. I don't believe Mr. Salmen would have liked that. Have looked over the program, and notice you will hear from some of our old time friends, Clippert, Blair and several others. I know, you will miss friend Eisenhart who always insisted on telling folks what he thought was the best thing to do and his advice was generally a good thing to follow.

I see you have Anton Vogt down for a paper. He can tell you how to make brick in Missoula and sell, them, too.

I am glad to say my son is better, but Mrs. Conway and I think it better not to leave home just now. My son William, Jr., will represent the family. With best wishes for a good convention.

Your truly,

Philadelphia,

WILLIAM CONWAY.

Always Enjoyed Conventions.

Dear Friend Randall:

We regret very much that we were unable to attend the convention this year, but as this is our rush season we simply had to give up the idea of coming. We know that it will be a very interesting as well as enjoyable meeting. We have always enjoyed your meetings and had planned on attending this one until the last day.

We know that this meeting will be as successful as previous years and we wish you many more years of prosperity.

Yours very truly,

CHAS. J. ANDERSON & SON,

Marinette, Wis.

Clarence Anderson.

THE NEXT CONVENTION CITY.

Secretary Randall: We have recently received a number of interesting letters of invitation from convention organizations and commercial bodies, urging us to consider their respective cities for our next place of meeting. One of the most urgent comes from Detroit, and included in the list is Chicago, Philadelphia, St. Louis, San Francisco, Richmond, Va., Atlantic City, Buffalo and Washington, D. C. You know we have a standing invitation from Birmingham, Ala., and Indianapolis. These various cities will be given consideration in due time by the Executive Committee.

President Burton: Is there anything else, Mr. Secretary?

Secretary Randall: I am tempted to say a word or two. Indeed I wish the entire membership of the National Association was here before me. I have no sore spots or grievances of any sort, but I think the members ought to know and realize the things under which we have labored in connection with our annual meeting. I took a letter ballot as to when and where we should meet. As a rule, the Executive Committee determines the matter, but there was a diversity of opinion among our members, so we said, "We will put it up to the members of the Association as to where they want to go." About 60 percent of those voting expressed a preference for Chicago for the place of meeting, but fully 85 to 90 percent expressed a preference for a meeting of the two associations at the same place, and that we regarded as a mandate for me to arrange, if possible, for a meeting of the two associations. So I set about meeting that condition and arranging for such a meeting. I had great difficulty in securing the co-operation of the other association. Just why, it is hard to divine, that they should feel justified in placing restrictions upon us in our work, so long as there was no interference with them. I tried to bring to the minds of the executives of the other association at a conference, that there was no occasion for any discord or friction, but in spite of that, the officers of the Common Brick Association built up a wall which it looked for a while that we could not surmount, but we did, and made our arrangements to come to Cleveland.

We have had a splendid convention, but you members know little of the difficulties which have had to be overcome. I want these remarks to go into the records that the membership at large may know and understand. If you wish us to meet at the same time and place as the other association there must be some action taken by you as members, or by

our Executive Committee which will insure the untrammelled work of the executive officers of this association, not hindered by any other organization. We cannot submit to unjust and unnecessary restrictions as to our operations. If your heart is in joint meetings, then you must insist upon the officers of the other association treating us, not as guests or objects of special favors, but as having equal rights. We must insist upon a square deal in all of our business transactions. I was told before the meeting, and there was an agreement drawn up to that effect, that we could not open our headquarters room in this hotel until the other association had actually adjourned. It was absolutely absurd. No reasonable man should try to place a restriction of that sort upon an organization, but I was placed under that handicap, and I did not know until Monday that I would be able to open our headquarters. I brought it to the attention of our executive officers, and there was, of course, a remonstrance, and the other people saw the light, and Mr. Bryan made the announcement at their first session that we should open our registration Monday morning, as usual. But for that we could not have transacted our business here this week in an efficient, orderly manner.

As I said before, I have no sore spots, but I want you to understand this organization stands on its own bottom, the



Grant Dibert, Pittsburgh, Pa.

equal of any other business men's organization with which it may come in contact, and we demand fair play and equal rights with any organization with which we have to deal. Unless the other organizations meet us on fair ground, with fair play between us, then you must revise your idea as to whether we can have a meeting of both organizations at the same time and place.

As I said, we have had a splendid meeting, a fine convention, excellent program, and this last session has been unusual in many respects. I thank you all for helping in this emergency; but for the cordial support of the executive officers who were in touch with the situation, I could not possibly have planned for the successful convention we have had here this week. (Applause).

President Burton: I think our Secretary has covered everything on this subject I had in mind, but I want to thank you all heartily for the support you, one and all, have given me. Our sessions have all been interesting, and when the records are printed I think you will find it has been one of the most interesting conventions we have ever had. I want to thank Mr. Randall and Miss Wallace for their untiring efforts, and I do think without their assistance and with the knowledge they have had in occasions of this sort which is so useful to us—without them we could not make our conventions as interesting as they should be. I again thank all of you and

ask you for your assistance and hearty support for this organization. I assure you I will do everything in my power to make this year a successful one for this organization. I want to thank the gentlemen who have contributed these papers. That is really the meat in the cocoanut, and when we get home and again look over the proceedings in our medium, The Clay-Worker, we will really appreciate these papers and discussions and see where we can adapt them to our own needs. Again thanking you all and wishing you a safe journey home, and a happy and successful year, I now declare the Thirty-seventh annual convention of the National Brick Manufacturers' Association closed. (Applause).

(THE BANQUET PROCEEDINGS will be given in full in the following March 28th issue of The Clay-Worker, the delay being necessary in order to afford some of the speakers desiring to do so an opportunity to revise the stenographer's report of their addresses, which were exceedingly interesting and will prove most instructive and entertaining.)

CONVENTION ECHOES.

Pleasurable Anticipations.

Dear Mr. Secretary:

I regret that it turned out so I could not attend the meet-



H. C. Kleymeyer, Evansville, Ind.

ing of the N. B. A., and I am enclosing my check to pay my dues. However I am looking forward with much pleasure in reading the proceedings in The Clay-Worker.

I had a good year, made some money and am busy getting ready for the coming season. Have already a large number of orders and some of them are from old customers who are pleased with brick and I owe it to them to see that they get quality. I find that I can sell good brick without any trouble. I fear that I will have some trouble getting labor owing to road construction that will commence in the spring. I am,

Yours very truly,
Lawrenceville, Va., Feb. 8, 1923. GEO. A. RANEY.

Recuperating In Florida.

Dear Friend Randall:

Well, here we are down in Florida, and wonder how it goes with you. I see by the papers, it is cold up your way. When we arrived here last Tuesday the thermometer was 80, and the next day about 75, the next day a little cooler and now it is cold with a little frost, but I think it will warm up today. We are having a good time here but think we will

start home next week. I must get back to East Williston and get things in shape for making brick, but from all reports it will be some job to get the clay out.

Say, we surely had a good time at Cleveland convention week. It is fine to meet old friends and make some new ones. The fellow who does not go to the conventions misses a lot, I think. It puts new life in the business and makes a fellow think he is doing something worth while. Then, too, he gets lots more fun out of his job.

Yours truly,

JOTHAM POST.

Tarpon Springs, Fla., Feb. 19, 1923.

One of The Best Conventions in Years.

Dear Mr. Randall:

Permit me to thank you for your favor of February 15th enclosing certificate of attendance.

I was sure pleased with the Convention, and believe it one of the best you have had in a number of years. We were especially well pleased with the treatment of the hotel people throughout, as well as the courtesy of yourself and associates.

Yours very truly,

E. E. BERRY, Sales Manager.

Tecumseh, Mich.

H. Brewer & Co.

Favors Further Joint Conventions.

Dear Theodore:

Mrs. Clippert and I enjoyed the two conventions, held at Cleveland, very much indeed and were exceptionally pleased to see two of our distinguished members, Messrs. Orton and Gates, seated at the banquet table and participating in the program.

I hope that the N. B. M. A. and the C. B. M. A. will continue to meet together, and in this connection would suggest that but one entertainment be given hereafter, either the smokerette or the banquet, and that it be held on a Wednesday evening, which I believe would assure a very large attendance and preclude the tiring of the members by too much entertainment.

Trusting that this short note will find you all well, I am, with kindest regards,

Yours very truly,

GEO. H. CLIPPERT.

Detroit, Mich., Feb. 15, 1923.

Convention Papers Exceptionally Interesting.

My dear Randall:

Immediately on arrival home from the convention we make haste to tell you how much we enjoyed ourselves at Cleveland.

We feel that it was one of the best we ever attended. There were some drawbacks on account of having to have the sessions so late in the week which was a mistake, but the attendance and interest on the part of those present were exceptionally good. I trust that in the future some arrangement can be made whereby the convention sessions can be held earlier in the week.

The different papers presented for the consideration of the members of the N. B. M. A. were exceptionally interesting and will prove of lasting benefit to the organization. You have established a standard that will be hard to beat at future sessions.

The pictures of the Mann trowel, for instance, gave most of the members a better understanding of its advantages and all of those I consulted gave it as their opinion that it is going to help solve the difficulty encountered by builders

in having their brick laid. It will make the Bricklayers' Union sit up and take notice, no matter how much they may try to discount its utility.

Enclosed find our check for \$2.50 for which please send us one of the Mann trowels.

With kind personal regards to the "newly-elected" secretary of the N. B. M. A. and his business family, we are,

Yours very truly,

Elkhart, Ind.

J. C. BOSS.

Treasurer and Mrs. Sibley Enjoyed Cleveland Convention.

Dear Theo:

Mrs. Sibley and I returned home well pleased with our convention trip. Mrs. Sibley enjoyed this, her first convention, immensely, and says she is always going with me to future gatherings.

I thought the convention at Cleveland was an immense success. In point of interest at the sessions, it seemed like the good old days, and I believe with President Burton at the helm we are going to have a successful year with an increased membership.

Sincerely,

Birmingham, Ala.

JOHN W. SIBLEY.

Praise for President Burton.

Dear Friend Randall:

Wish to inform you that I have arrived home safe and in good spirits and health. My men had been working on repairs and I found everything satisfactory.

Orders have been coming in during my absence and ship-

ments and deliveries made promptly. Inquiries for large jobs in our territory are coming in from all directions. Ipso facto—we are looking forward to a busy season.

I was pleased with the program of the convention, which was carried out to the letter. President Burton surely was the right man in the right place, who, with his smiling face, kept us all in good spirits by handling the discussions and deliberations in a diplomatic manner. To the absent members I must say—you missed the time of your life by not being with us this year.

Yours very truly,

Quincy, Ill.

JOHN T. HUMMERT.

Impressions of A Member Who Has Attended Twenty-five Conventions.

My dear Randall:

Since my return from our recent N. B. M. A. meeting I have been trying to analyze my impressions and feelings about it. I now find my mind like it was twenty-five years ago when returning from my first meeting—full of enthusiasm—and an inspiration that in the future the Association will accomplish more good than it ever did in the past.

The N. B. M. A. is the parent organization in which the practical clayworker and the practical equipment man have always met on common mutual ground to work out and solve their difficulties and it will ever continue thus, because the needs of the Clay Industry demand it.

I fully appreciate your untiring effort for so great a cause, which is the real support of all civilization.

Please accept my best wishes.

Sincerely yours,

Dayton, Ohio.

I. M. JUSTICE.

NUMERICAL ROSTER N.B.M.A. CLEVELAND 1923

Name	Firm	Town	Name	Firm	Town
1. C. P. MAYER, Mayer Brick Co., Bridgeville, Pa.			40. RICHARD REPINE, Hadfield-Penfield Steel Co., Bucyrus, O.		
2. GEORGE H. CLIPPERT, Clippert Brick Co., Detroit, Mich.			41. A. WHITCRAFT, Hadfield-Penfield Steel Co., Bucyrus, O.		
3. CHARLES F. CLIPPERT, Clippert Brick Co., Detroit, Mich.			42. H. D. VAN DOORN, Hadfield-Penfield Steel Co., Bucyrus, O.		
4. JOTHAM POST, East Williston, Long Island, N. Y.			43. HARRY BROWN, Hadfield-Penfield Steel Co., Bucyrus, O.		
5. ALFRED PETTIT, Pettit Brick Corp., Brooklyn, N. Y.			44. JOHN J. MORONEY, Chicago Brick Mach. Co., Chicago, Ill.		
6. JOHN W. SIBLEY, B'ham Clay Prod. Co., Birmingham, Ala.			45. E. J. SHAW, Hadfield-Penfield Steel Co., Bucyrus, O.		
7. JAMES E. RANDALL, <i>The Clay-Worker</i> , Indianapolis, Ind.			46. E. A. BAKER, Hadfield-Penfield Steel Co., Bucyrus, O.		
8. R. O. CLARK, Clark & Sons Brick Co., East Berlin, Conn.			47. CLAUDE E. FULLER, Amer. Equip. Co., New York, N. Y.		
9. R. D. LINDSAY, Denver Press Brick Co., Denver, Colo.			48. E. W. DOW, The Stevenson Co., Wellsville, O.		
10. PETER ERICKSON, J. T. Davie Brick Co., Mead, Wash.			49. M. E. GREGORY, Br'k, Terra Cotta & Tile Co., Corning, N. Y.		
11. THEO. A. RANDALL, Sec. N. B. M. A., Indianapolis, Ind.			50. G. E. GREGORY, Br'k, Terra Cotta & Tile Co., Corning, N. Y.		
12. WILL P. BLAIR, N. P. B. M. A., Cleveland, Ohio.			51. D. I. WHEELER, Morse Chain Co., Ithaca, N. Y.		
13. W. N. DURBIN, Anderson F. & M. Works, Anderson, Ind.			52. STILES C. SMITH, Morse Chain Co., Ithaca, N. Y.		
14. W. N. CARY, Cary Brick Co., Albany, N. Y.			53. E. S. NEWCOMB, Charles Engelhard, New York, N. Y.		
15. M. H. DONNELLY, Donnelly Brick Co., New Britain, Conn.			54. J. S. S. ALLISON, Charles Engelhard, New York, N. Y.		
16. A. W. E. HELLYER, Ottawa Brick Mfg. Co., Ottawa, Ont.			55. E. E. BERRY, H. S. Brewer & Co., Tecumseh, Mich.		
17. C. H. LOCHER, Glasgow Clay Products Co., Glasgow, Va.			56. C. A. LANO, Borden Brick & Tile Co., Goldsboro, N. C.		
18. H. R. GARDEN, Salem Brick Co., Salem, Va.			57. E. W. KINGSBURY, Scandinavia Belting Co., Cleveland, O.		
19. ROY C. BENNETT, Wellington Machine Co., Cleveland, Ohio.			58. A. K. KINLEY, Scandinavia Belting Co., Cleveland, O.		
20. J. A. C. BOURDON, St. Lawrence Brick Co., LaPrairie, P. Q.			59. J. M. HALLISSY, Scandinavia Belting Co., Columbus, O.		
21. F. W. KLING, Adams, Payne & Gleaves, Inc., Roanoke, Va.			60. J. H. RESIDE, Scandinavia Belting Co., Cleveland, O.		
22. H. H. FIELD, Fields Brick Co., Chester, Pa.			61. EDW. E. KRAUSS, Chambers Bros. Co., Philadelphia, Pa.		
23. J. ELLIS HALL, Adams Bros. Payne Co., Lynchburg, Va.			62. FRANK WINDOLPH, Chambers Bros. Co., Philadelphia, Pa.		
24. HUGH CURRAN, B'field Sandstone Bk. Co., Bakersfield, Cal.			63. G. A. JORDAN, Hadfield-Penfield Steel Co., Bucyrus, O.		
25. THOS. F. GOLDRICK, Philip Goldrick Sons, Kingston, N. Y.			64. A. O. DUPUY, Pioneer Mach. & Eng. Co., Cleveland, O.		
26. B. TAYLOR, Ohio Galvanizing & Mfg. Co., Niles, Ohio.			65. HUBERT SOMERS, Somers Brick Co., Atlantic City, N. J.		
27. JOHN D. KINSEY, Weller Mfg. Co., Chicago, Ill.			66. GEORGE J. POTTS, C. & G. Potts Co., Indianapolis, Ind.		
28. JOHN T. HUMMERT, Gem City Press Brick Co., Quincy, Ill.			67. H. TITUS, Erie Steam Shovel Co., Erie, Pa.		
29. J. E. MULLEN, R. D. Nuttal Co., Pittsburgh, Pa.			68. WALTER P. SIMON, Simons Brick Co., Los Angeles, Cal.		
30. R. C. PENFIELD, American Equipment Co., Chicago, Ill.			69. H. B. SIMPSON, Mon'hela Clay Mfg. Co., Monongahela, Pa.		
31. L. W. PENFIELD, Hadfield-Penfield Stl. Co., Willoughby, O.			70. F. P. NICKERSON, W. S. Tyler Co., Cleveland, O.		
32. J. PRESTON PENFIELD, Amer. Equip. Co., Bucyrus, O.			71. THOS. KENNEDY, Dom. S. P. & C. Co., Swansea, Ont.		
33. R. O. PERROTT, Hadfield-Penfield Steel Co., Bucyrus, O.			72. GUS LARSEN, Los Angeles Brick Co., Los Angeles, Cal.		
34. F. L. HOPLEY, Hadfield-Penfield Steel Co., Bucyrus, O.			73. C. G. BERG, Port Costa Brick Works, San Francisco, Cal.		
35. LAMBERT HAIGH, Hadfield-Penfield Steel Co., Bucyrus, O.			74. WM. BURGESS, Don Valley Brick Works, Toronto, Ont.		
36. C. B. SHARER, Hadfield-Penfield Co., Bucyrus, O.			75. C. W. NUSHAW, Int. Clay Mach. Co., Dayton, O.		
37. DAVIS BROWN, Hadfield-Penfield Steel Co., Bucyrus, O.			76. GEO. H. PAXTON, Int. Clay Mach. Co., Dayton, O.		
38. W. R. CUNNINGHAM, Hadfield-Penfield Stl. Co., Bucyrus, O.			77. R. H. McELROY, International Clay Mach. Co., Dayton, O.		
39. W. H. MERKEL, Hadfield-Penfield Steel Co., Bucyrus, O.			78. E. H. ANDERLE, Int. Clay Mach. Co., Dayton, O.		

Name	Firm	Town	Name	Firm	Town
79. JOS. T. BYRNE, Jos. T. Byrne Estate, Philadelphia, Pa.			161. J. R. LUCKTENBERG, Burton-Townsend Co., Ashtabula, O.		
80. I. M. JUSTICE, Mfrs. Equip. Co., Dayton, O.			162. J. M. POWELL, Indiana Drain Tile Co., Brooklyn, Ind.		
81. H. H. MAYFIELD, Salmen Brick & Lumber Co., Slidell, La.			163. T. B. MOATS, Smokeless Oil Burner Co., Bucyrus, O.		
82. FRANK H. ROBINSON, Pittsburgh, Pa.			164. C. F. JONES, Smokeless Oil Burner Co., Bucyrus, O.		
83. GLEN PERDUE, Perdue Brick Co., Salisbury, Md.			165. A. D. COCHRAN, The Bonnot Co., Canton, O.		
84. EDW. A. KNORR, Queen City Shale Brick Co., Cincinnati, O.			166. A. A. OLDHAM, The Bonnot Co., Canton, O.		
85. JOSEPH SIDLO, Builders' Brick Co., Chicago, Ill.			167. W. A. MEDDICK, Lakewood Eng. Co., Cleveland, O.		
86. J. L. SCHROLL, Mfrs. Equip. Co., Dayton, O.			168. EDW. A. ROBERTS, Builders Exch., Cleveland, O.		
87. E. M. MAHLMEISTER, Mfrs. Equip. Co., Dayton, O.			169. BRUCE G. SHOTTON, Hendrick Mfg. Co., Carbondale, Pa.		
88. W. H. SACHS, Mfrs. Equip. Co., Dayton, O.			170. G. W. DENISON, The Ohio Clay Co., Cleveland, O.		
89. W. C. MITCHELL, Superior Press Brick Co., St. Louis, Mo.			171. LEONARD A. DENISON, The Ohio Clay Co., Cleveland, O.		
90. H. J. FLOOD, Chisholm, Boyd & White, Chicago, Ill.			172. D. J. STRICKLAND, Wellington Mach. Co. and American Equipment Co., Cleveland, O.		
91. S. S. CHISHOLM, Chisholm, Boyd & White, Chicago, Ill.			173. A. S. CUNNINGHAM, Lehigh Brick Works, Allentown, Pa.		
92. L. W. FLOOD, Chisholm, Boyd & White, Chicago, Ill.			174. ALVA S. STAPLES, Staples Brick Co., Kingston, N. Y.		
93. L. D. WALRATH, Acme Shale Brick Co., Buffalo, N. Y.			175. CHAS. NICKERSON, Staples Brick Co., Kingston, N. Y.		
94. WM. P. HAAKE, Acme Shale Brick Co., Buffalo, N. Y.			176. RUFUS C. BURTON, Burton-Townsend Co., Zanesville, O.		
95. T. A. HIBBEN, The Stevenson Co., Wellsville, O.			177. WM. H. LUCKTENBURG, Burton-Townsend Co., Zanesville, O.		
96. MARTIN T. ABBOTT, The Stevenson Co., Wellsville, O.			178. MISS STELLA FOX, Burton-Townsend Co., Zanesville, O.		
97. JACOB STOCKE, JR., Progress Press B'k Co., St. Louis, Mo.			179. R. G. KINNEL, Burton-Townsend Co., Zanesville, O.		
98. WM. CONWAY, JR., Wm. Conway Co., Philadelphia, Pa.			180. C. E. MacLEAN, Burton-Townsend Co., Zanesville, O.		
99. S. GEIJSBEEK, Geijsbeek Eng. Co., Seattle, Wash.			181. K. J. HEILMAN, Otto Heilman Co., Tiffin, O.		
100. C. M. ROSS, The Wellington Machine Co., Wellington, O.			182. J. C. BOSS, J. C. Boss Eng. Co., Elkhart, Ind.		
101. WM. HAMMERSCHMIDT, Lomb'd B. & T. Co., Lombard, Ill.			183. G. G. WHEAT, Boston, Mass.		
102. A. HAMMERSCHMIDT, Lomb'd B. & T. Co., Lombard, Ill.			184. S. A. BOOKER, Shale Brick Co., Columbus, O.		
103. E. F. DECKERT, Main Belting Co., Johnstown, Pa.			185. OLIVER SCHAUER, Keystone Lub. Co., Philadelphia, Co.		
104. B. W. NORRIS, Parker-Russell Mach. Mfg. Co., St. Louis, Mo.			186. F. A. GUIGNON, Chicago, Ill.		
105. GEO. W. MITMAN, C. K. Williams & Co., Easton, Pa.			187. T. E. WILSON, Pittsburgh Clay Products Co., Pittsburgh, Pa.		
106. GEO. W. AULMANN, Eagle Iron Works, Des Moines, Ia.			188. J. TERRY, Terry Bros. Co., Kingston, N. Y.		
107. HENRY WEBSTER, Henry Webster & Sons, Hamden, O.			189. M. E. GATES, Clay Service Corp., Chicago, Ill.		
108. A. G. R. WEBSTER, Henry Webster & Sons, Hamden, O.			190. H. J. VOTAW, The Fate-Root-Heath Co., Plymouth, O.		
109. F. M. VAN DEUSEN, Sylacauga Brick Co., Sylacauga, Ala.			191. V. R. JOSE, JR., Standard Dry Kiln Co., Indianapolis, Ind.		
109. H. O. STEELE, J. C. Steele & Sons, Statesville, N. C.			192. DOUGLAS F. STEVENS, Acme Brick Co., Danville, Ill.		
111. F. F. STEELE, J. C. Steele & Sons, Statesville, N. C.			193. L. W. JOHNSTON, Independent Brick Co., Kirby, O.		
112. O. W. DUNLAP, Dunlap Mfg. Co., Bloomington, Ill.			194. P. R. COLVIN, Bessemer Brick Co., Monongahela, Pa.		
113. L. P. ISAAC, Kanawha Brick Co., Charleston, W. Va.			195. OSCAR ZIMBAL, O. Zimbal Brick Co., Sheboygan, Wis.		
114. EARL F. HILLER, Main Belting Co., Philadelphia, Pa.			196. A. O. WACHTER, Falls B'k & Tile Co., Sheboygan Falls, Wis.		
115. W. D. RICHARDSON, Ceramic Eng. Co., Columbus, O.			197. WARREN GRIFFISS, Baltimore Brick Co., Baltimore, Md.		
116. C. P. MERTENS, Amer. Equip. Co., Chicago, Ill.			198. L. T. LEWIS, L. T. Lewis & Sons, Nashville, Tenn.		
117. FRED S. CURTIS, W. S. Tyler Co., Cleveland, O.			199. THOS. M. WILSON, Brick & Clay Eng. Co., Pittsburgh, Pa.		
118. FRANK S. GERY, Glen Gery Shale Brick Co., Reading, Pa.			200. I. A. RYTENBURG, Sumter Brick Works, Sumter, S. C.		
119. E. C. SHIMER, Lehigh Brick Works, Allentown, Pa.			201. H. C. KLEYMEYER, Stand. Brick Mfg. Co., Evansville, Ind.		
120. R. L. QUEISSER, JR., R. L. Queisser & Co., Cleveland, O.			202. FRANK D. CHASE, Frank D. Chase, Inc., Chicago, Ill.		
121. THOS. A. BICHL, Illinois Brick Co., Chicago, Ill.			203. J. C. ROBINSON, Clay Products Corp., Hampton, Va.		
122. FRANK B. LAMBERT, Illinois Brick Co., Chicago, Ill.			204. B. F. WEBER, National Brick Co., Chicago, Ill.		
123. W. C. WELLER, Illinois Brick Co., Manteno, Ill.			205. C. W. FERNHOLTZ, Fernholtz Mach. Co., Los Angeles, Cal.		
124. R. L. QUEISSER, R. L. Queisser Co., Cleveland, O.			206. A. J. DUNN, Chase Foundry & Mfg. Co., Columbus, O.		
125. R. G. HODGE, Alliance Clay Product Co., Alliance, O.			207. ED. FLANDERS, Marietta Shale Brick Co., Marietta, O.		
126. A. E. RUGGLY, Alliance Clay Product Co., Alliance, O.			208. MORGAN RAMSEY, Bay City Dredge Works, Bay City, Mich.		
127. HAROLD BONNER, Alliance Clay Product Co., Alliance, O.			209. J. F. JOHNSON, Cherokee Brick Co., Raleigh, N. C.		
128. HOWARD MORRIS, Alliance Clay Product Co., Alliance, O.			210. ELLIS LOVEJOY, Columbus, O.		
129. IRVIN COBB, Alliance Clay Product Co., Alliance, O.			211. O. N. TOWNSEND, The Burton-Townsend Co., Zanesville, O.		
130. J. H. JONES, Alliance Clay Product Co., Alliance, O.			212. G. M. NORWOOD, Geo. M. Norwood Brick Co., Raleigh, N. C.		
131. J. OATES WILCOX, Alliance Clay Product Co., Alliance, O.			213. WILL N. DURBIN, Anderson F. & M. Works, Anderson, Ind.		
132. CASPER BRAUN, Ott Brick & Tile Co., Kitchener, Ont.			214. WM. CONWAY, Conway Brick Co., Philadelphia, Pa.		
133. GEO. W. LOVELAND, Ellicott Brick Co., Westfalls, N. Y.			215. ELMER N. FRANCY, Toronto F. & M. Works, Toronto, O.		
134. CHAS. BARBER, Ellicott Brick Co., Orchard Park, N. Y.			216. H. A. BURT, Galion Iron Works, Galion, O.		
135. F. W. GLECKLER, Gleckler Brick Co., Oak Harbor, O.			217. J. H. KING, Colchester B. & T. Co., Colchester, Ill.		
136. FRANK C. ERWIN, Denver Press Brick Co., Denver, Colo.			218. H. R. SYKES, Fate-Root-Heath Co., Plymouth, O.		
137. GEO. H. SCOTT, Shale Products, Inglewood, Ont.			219. GEO. W. LOVELAND, Ellicott Brick Co., West Falls, N. Y.		
138. G. V. D. HUTTON, The Hutton Brick Co., Kingston, N. Y.			220. H. EWART, The Minter System, Albany, Ga.		
139. W. C. ALWINE, Alwine Bros. Brick Co., New Oxford, Pa.			221. J. H. BARDON, Morral Clay Co., Morral, O.		
140. R. S. RICHARDS, The Atlas Car & Mfg. Co., Cleveland, O.			222. P. E. HELLER, Morral Clay Co., Morral, O.		
141. R. C. WHITSITT, W. G. Bush & Co., Nashville, Tenn.			223. J. W. ROBINSON, Stand. Stone & Brick Co., Bellaire, O.		
142. G. J. LONGNECKER, H. Fischer Brick Co., Memphis, Tenn.			224. J. A. MERCIER, Detroit, Mich.		
143. J. F. CHAMBERS, Fate-Root-Heath Co., Crestline, O.			225. W. G. LONG, New England Brick Co., Boston, Mass.		
144. E. HEITBRINK, Illinois Brick Co., Chicago, Ill.			226. C. H. BRANSFORD, W. M. Hill & Sons, Fulton, Ky.		
145. AUG. J. AVE, Illinois Brick Co., Evanston, Ill.			227. W. M. HILL, W. M. Hill & Sons, Fulton, Ky.		
146. FOSTER SMART, Illinois Brick Co., Evanston, Ill.			228. D. W. HILL, W. M. Hill & Sons, Fulton, Ky.		
147. C. I. UCKER, Clark Trucktractor Co., Pittsburgh, Pa.			229. A. C. SCULLY, Lancaster Iron Works, Lancaster, Pa.		
148. F. E. COOPER, Clark Trucktractor Co., Pittsburgh, Pa.			230. JAMES P. MARTIN, Lancaster Iron Works, Lancaster, Pa.		
149. T. A. CARNO, Church Brick Co., Trenton, N. J.			231. CHARLES TOBIN, Lancaster Iron Works, Lancaster, Pa.		
150. D. WARREN DeROSAY, Corry Brick & Tile Co., Corry, Pa.			232. F. T. BUZARD, Lancaster Works, Lancaster, Pa.		
151. HUGH H. WIKLE, Peo. Gas Light & Coke Co., Chicago, Ill.			233. GRANT DIBERT, Iron City Brick & Stone Co., Pittsburgh, Pa.		
152. J. F. REYNOLDS, I. L. Stiles & Son B'k Co., N. Haven, Conn.			234. J. T. READ, Hamilton & Toronto S. P. Co., Hamilton, Ont.		
153. PAUL WHEELER, Link-Belt Co., Chicago, Ill.			235. F. B. DUNN, Dunn Wire Cut Lug Brick Co., Conneaut, O.		
154. B. E. PLACE, E. M. Freese & Co., Galion, O.			236. H. S. LANGWORTHY, J'ville Clay P. Co., Jewettville, N. Y.		
155. E. L. HESS, E. M. Freese & Co., Galion, O.			237. WM. J. HEIDECKER, Heidecker Brick Co., Sharonsville, O.		
156. R. A. WHISTON, E. M. Freese & Co., Galion, O.			238. RAY H. COULTRAP, Burton-Townsend, Zanesville, O.		
157. G. R. HESS, E. M. Freese & Co., Galion, O.			239. O. C. WEBSTER, Burton-Townsend B. & C. Co., Zanesville, O.		
158. H. H. FREESE, E. M. Freese & Co., Galion, O.			240. F. C. FERRELL, Burton-Townsend B. & C. Co., Zanesville, O.		
159. H. H. OBERLY, Jas. B. Oberly & Co., Wilmington, Del.					
160. J. H. BROWN, Chester Brick Corp., Chester, Pa.					

(Continued on Page 288.)

RESEARCH IN GEORGIA CLAYS AND BAUXITES.

THE CERAMIC EXPERIMENT STATION of the Bureau of Mines at Columbus, is carrying on some investigations and experimental work under a co-operative arrangement with the Central of Georgia Railway of certain clays of Georgia along this line. The co-operative arrangement has been renewed for another year and the work now is grouped under three heads, that of, (1) whiteware clay, (2) refractory clays and bauxite, (3) vitrified face brick.

A semi-commercial centrifugal elutriation outfit has been devised by R. T. Stull of the station for the separation from the white ware clays of certain deleterious materials. With this outfit about a thousand pounds of clay can be washed at one time. Seven clays have been so washed with seven more to be washed.

Five hundred pounds of the most promising of these clays will be sent to the Homer Laughlin China Co., at Newell, W. Va., where some 800 pieces of china are to be made in accordance with pottery practice. The behavior of these clays, as to working properties, color, percentage loss, etc., will be tabulated.

Some clays which are unsatisfactory for casting and jiggering can be used successfully in dry-press processes; so 500 pounds of one of the washed clays is to be made into tiles at the American Encaustic Tiling Co., Zanesville, Ohio, where this process is used.

Electrical porcelain is to be made from another of the clays at the plant of R. Thomas & Sons Co., East Liverpool, Ohio. The body which is best suited for this purpose is to be worked out and prepared at the station.

Proper dewatering methods will be studied in an endeavor to make both a saving in the time necessary to refine the clay and to improve its slaking properties. In this connection arrangements have been made to have some of the slips washed by the Bureau of Mines put through a Dorr thickener and continuous filter process. The Dorr Co., and the United Filters Corporation, are co-operating in the work.

Preheating in order to improve the casting properties of these clays, will be tried out, as a preliminary investigation has indicated that this property can be improved by such treatment.

Great quantities of impure bauxites and bauxitic clays, which have been little utilized up to the present time, are being tested for their utility as material for refractories.

Brick made from these clays and bauxites have been proved to have a higher fusion temperature than the best grade of fire brick; exceptional hot crushing strengths and low spalling tendency. These properties, together with the large range of basicity obtainable in such refractories made from it, should insure a large application.

Tests are under way to prove whether it is not possible to use the same material for the bond as is used in the grog, since this would greatly cheapen manufacturing costs.

The bauxite grog is to be electrically sintered at the Seattle Station of the Bureau of Mines. This grog is to be used in the electric furnace refractories.

The refractories are to be tested out in electric furnace practice, and bungs for malleable iron furnaces. The refractories are to be made at one of the plants of the Harbison-Walker Co., Pittsburgh, Pa. Mechanical strength, low spalling tendency and resistance to cinder abrasion are prime requisites for this type of refractory.

The electric furnace refractories are to be tested at the plant of the Bonney Floyd Co., Columbus, Ohio, in a Heroult furnace melting alloy steel. The requisites for such refractories are high fusion point and low slag penetration.

The bung brick, which have to withstand considerable

heat together with sudden temperature changes, are to be tested at the plant of the Ohio Malleable Iron Co., Columbus, Ohio.

Large deposits of feldspar not sufficiently pure for pottery purposes exist along the right of way of the Central of Georgia Railway. These deposits can probably be utilized, together with some of the white clays, for making a semi-vitreous face brick. It is the purpose of the Bureau of Mines to run an investigation pursuant to the utilization of this material.

CHICAGO TO OTTAWA.

THE READERS of The Clay-Worker will see by the announcement in the advertisement of the L. E. Rodgers Engineering Company on page 221 of this issue that enterprising firm is moving its main office from Chicago to Ottawa, Ill. Mr. Rodgers who is recognized as an authority on



L. E. Rodgers, Chicago, Ill.

waste heat drying finds it desirable to get near his base of production, and Ottawa is the most desirable point, so the main office will be established there, where a very cordial welcome will be extended to any member of the craft who may visit in that vicinity at any time. Mr. Rodgers is also interested in a very extensive clay property in that same vicinity, and the change will enable him to give more personal attention to that enterprise than has been possible heretofore.

Mr. Rodgers has a wide acquaintance and a very high attention to that enterprise than has been possible heretofore. the country. One of the leading refractory manufacturers recently said of him: "We have known L. E. Rodgers for many years and have personal knowledge of his skill in designing and erecting clay plants. He has installed his dryers on a number of our plants and they have invariably given entire satisfaction in every respect. Whatever Mr. Rodgers does, he does well."

The foregoing will, we think, coincide with the judgment

of every clayworker who has had dealings with the L. E. Rodgers Engineering Company, and now that they are increasing their facilities, Ottawa will become the mecca of those in the clayworking business who want up-to-date information along engineering lines which this firm has developed.

THE HOLMES CREW.

THE BUREAU OF MINES Laboratory Car, Holmes, was last reported at the plant of the American Refractories Co., at Baltimore, starting on its work of co-operative investigation of the burning of refractories. S. M. Kier of Pittsburgh, is chairman of the Refractories Manufacturers' Committee which arranged this co-operative work. The Holmes crew on this round consists of seven technical men, a cook and a mechanic's helper.

The technical force consists of four ceramic engineers and three fuel engineers, all of whom have had experiences on problems of this type. The ceramic men are E. P. Ogden, foreman in immediate charge of the work; Alfred Whitford, A. E. Rupp and A. H. Fessler. The fuel engineers are W. E. Rice, car manager; R. F. Lurger and F. Wentzel.

After about a month's stay at the Baltimore plant, the car will go to six other plants, situated at Brooklyn, N. Y.; Womelsdorf and Salina, Pa.; Hayward Station and Taylor, Ky., and Ottawa, Ill. This work is under the immediate supervision of G. A. Bole, superintendent of the Bureau of Mines Ceramic Station, Columbus, Ohio, and under the general supervision of the Division of Mineral Technology of the Bureau of which Dr. R. B. Moore is chief and Dr. L. I. Shaw assistant chief, collaborating with the Fuel Division, of which O. P. Hood is chief.

GOOD PAVING NEWS.

THE BEST NEWS of the month pertaining to the paving brick industry comes from the convention city of Cleveland in the form of a bulletin report of the National Paving Brick Manufacturers' Association to the effect that more brick was laid in Cleveland during 1922 than all other types of paving put together. Quoting official figures this report says that 17,089 miles of vitrified brick paving was laid during the year, at an average cost of \$75,830 per mile. This was more than the mileage of concrete, asphalt, granite and all other forms of paving combined. And the report is not only cheering within itself in that it demonstrates the superiority of vitrified brick for paving work, but it should put energy and courage into the sales efforts of others in other cities and result in a sort of new craze in booming paving brick. And that is not all, either. The successful demonstration at Cleveland in the paving of city streets should pave the way to renewed efforts and bigger doing in the pushing of brick paving for the cross-country roads.

AN EXPOSITION OF BUILDING IDEAS.

There is to be put on at Cleveland during the week of June 25th to 30th under the auspices of the National Association of Real Estate Boards an exposition of building ideas. The purpose back of it all is to have not only an exhibit of all classes of building material but to include ideas and plans and other features of educational value to real estate people and to the building industries.

The exposition will be held in the new auditorium in Cleveland with a feature educational exhibit in the center of the floor and displays and booth space by material men and others arranged systematically throughout the building.

Among the exhibitors mentioned who have been invited to make displays are several in the clay products industries, a number in the lumber industries and kindred lines, metal industries, cement, lime, plate glass and so on.

Those interested in this exposition and desiring to investigate with a view to taking exhibition space may obtain full particulars by addressing Tom Convey, business manager, Swetland Bldg., Cleveland, Ohio.

ST. LOUIS REGISTERS PROGRESS.

Third Vice President Stocke Returns Thanks and Invites the N. B. M. A. to Again Meet in St. Louis.

Dear Mr. Secretary:

Permit me to thank the members of the National Brick Manufacturers' Association, through our Official Organ, for the great honor done me and the confidence evinced in selecting me for third vice-president of the parent association of the industry which does more than any other toward the housing of the population of this great nation.

You may feel assured that I will do all in my power to further the interests of the National Brick Manufacturers' Association, and will at all times be in readiness to serve its members to the best of my ability, and should they at any time be in need of information from St. Louis, I would consider it a privilege to serve them.

I was very sorry to have to miss the last session and the banquet. I had a hurry call from New York on an urgent matter of business, so I was obliged to leave. I will hope for better luck next time.

I have never forgotten the splendid convention we had here in St. Louis a good many years ago, when I had the pleasure of acting on the Entertainment Committee. It was a fine meeting and I am sure we can have another one here just as good. I look forward to another opportunity to welcome the members of the Association to St. Louis and I hope our city will again be selected as the convention city.

If I may suggest, this should be as soon as our new Auditorium is built, plans for which are being completed. In this building we expect to have an Exhibition Room larger and better equipped than any built to date.

This is only one of many projects which were recently voted on in our \$87,000,000 bond issue which puts St. Louis on the map as one of the best cities of the nation.

With an invitation to visit with us in St. Louis at your convenience, I am,

Yours very truly,

St. Louis, March 10, 1923.

J. STOCKE, JR.

TRADE NOTES.

The Cincinnati Sewer Pipe Company, Cincinnati, Ohio, advises us they are in the market for wheelbarrows for handling sewer pipe and will be glad to receive prices and catalogues.

The Eagle Iron Works have found it necessary to enlarge their plant at Des Moines, Iowa, in order to meet their increasing trade. In addition to dry and wet pan and clay crushers, they manufacture the Powell shale planer. The work on the new plant is now well under way, and they hope to have same completed long before the close of the year.

C. L. Gard, formerly superintendent of the Harrisonville Brick and Tile Company at Harrisonville, Mo., has moved to Malvern, Ark., where he will be associated with the Arkansas Brick and Tile Company as superintendent.

The Homer-Laughlin China Company, Newell, Va., one of the largest, if not the largest, manufacturers of semi-porcelain general ware in the country, recently closed a contract with Carl B. Harrop of Columbus, Ohio, for two Harrop car tunnel kilns.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. March 14, 1923. No. 3.

CURRENT COMMENT.

Spring brings a fever of busy times.

* * *

The winter harvest of convention ideas should be good for trade progress.

* * *

Maybe money talks, but it does not speak German nor any of the other foreign languages very loudly these days.

* * *

It is pleasing to note that the old south is showing progress both in brickmaking and in developing hollow building tile.

* * *

A new and better idea is not worth a cent materially till you put it to work. There is more than a hint in this to put new ideas into harness.

* * *

The man who got busy at making repairs and improvements early in the winter, can profit from it now by getting busier earlier in the spring.

* * *

It has taken the coal industry to show us that it is possible for an industry to be over-developed and actually get increased prices instead of decreases as a result.

* * *

This is plainly a year in which we should seek for ways and means to reduce the cost of bricklaying as well as to exert ourselves to hold the cost of brick manufacturing down to a rational basis.

* * *

Those who were not able to attend the big convention, can profit from reading the papers and discussions, and out of it

they should get inspiration to attend the next convention as well as information of value during the year.

* * *

The meek may eventually inherit the earth, but in its present state they wouldn't know what to do with it.

* * *

A little more attention to the subject of brick handling and how to reduce the cost here should prove fruitful of good results.

* * *

In making haste to supply the spring needs in brick let us not forget that proper burning and good quality must come first and not be sacrificed to speed.

* * *

We now hear of a new crop of millionaires with a bootleg brand which have come to supersede the war profiteers, and somehow it does not sound better and better.

* * *

When labor is scarce and high in its wage demands it ought to help drive home the realization that the more work we can make power devices perform the better it is for production.

* * *

We have a little more of that thing called modern salesmanship in the brick business than some years ago, but that does not alter the fact that the great need of the industry today is more and better salesmanship.

* * *

The cost of building has mounted high enough to be a good argument in favor of more permanent building, yet when one sees the amount of frame construction going into use, there is a feeling that we have not yet thoroughly sold the public on the idea of clay products.

* * *

It is easy enough for us to understand figures showing how government in this country is costing the people about eight and a half billion dollars a year. The difficult problem is to see some way clear to a reduction of this cost combined with improvement in government.

KEEP INTEREST AND ENTHUSIASM ALIVE.

The conventions held during the mid-winter season not only arouse interest in many subjects pertaining to the manufacture and distribution of clay products, but they help to awaken a keener enthusiasm all around in progressive ideas. One trouble, and one reason why we sometimes fall short of expectations in final results, is that after those attending the conventions go back home and get busy with the every-day affairs of life, they forget and neglect to keep alive the interest aroused at the conventions and to keep stimulated the enthusiasm begotten from this same source. The way to get a fuller measure of good out of convention efforts, is to keep this interest and enthusiasm alive after you get back home, and put them to work for you. If you will do this you will easily get double the benefit out of association efforts that you will get if you neglect to make use of the good ideas gained and the enthusiasm aroused.

THE COAL OUTLOOK.

Conditions in the coal industry at the present time look like a continuation of the present high scale of pay for coal mining with whatever reduction in prices consistent with this may be brought about by competitive conditions among the coal mine operators during the spring and summer months. There seems no doubt but what competition will bring a trimming of prices down to close margins on the basis of the

wage scale now in existence. This will not mean coal as low as we have known it in the past, but it should bring a welcome easement in coal cost, and the main question now is just how much this may be. If the signs read right coal prices should show an easing off during the latter days of March, and as the first of April is the end of the fiscal coal year and marks the making of new wage agreements, it should bring with it some clear understanding of what developments we may expect in the way of better conditions for the early summer. As stated above, the present indications are that the old wage scale will be continued and that competition will bring prices as low as are consistent with this high wage rate.

WHAT WILL THE YEAR BRING?

What will the summer and fall season of 1923 bring to the clayworking industry? Will it bring that measure of progress in the use of burned clay products in building operation which they deserve, or will it be like 1922, a heavier percentage of frame buildings because of the hurry and of the high cost of building operation? Some day in the near future there will come a fuller measure of realization that burned clay products are the best building material for the home, but meantime how about getting busy at trying to speed this up? What the year may bring depends considerably upon the efforts we all put forth to make it bring the things it should.

SCHOOL BUILDING PLANS.

An interesting feature of the estimates so far made public of the probable building operations of the year is in that they show school buildings as leading in the total value of probable construction by all classes. An estimate shows that the requirements in school buildings call for the expenditure of about a billion and a half during the year. Churches call for another half billion, and in both cases we have specifically a class of buildings in which safety against fire should be emphasized. It promises to be a great year in school building, so let every brick and hollow building tile man get busy that it may be also a great year in building fire-safe school buildings by using in their construction burned clay products which constitute the best building material on earth.

COST RECORDS AND REDUCTIONS.

Sometimes it looks like we have centered too much attention on the matter of getting accurate records of cost and not enough on ways and means for reducing costs. Keeping cost records is an important matter, and it is the first step, but the next step, that of reducing costs, is still more important. To impress and emphasize this point, here are a few good words spoken by Secretary of Commerce Hoover:

"Every time we can take a penny off the cost of producing and distributing a commodity, we have made that much more of the commodity available to that many more people. In other words the whole standard of living of the American people rises directly with the cheapening of production and distribution."

It is easy enough to see the logic here and apply it to the brick industry. The more we can lessen the cost of producing, distributing and laying up brick, the more people can and will build brick homes, and the better will be the standard of homes and of living.

The brick manufacturer is in direct control of only part of this—the manufacturing and part of the distribution. And it is here he should center most of his efforts at reducing costs to a minimum. But by study and research he may help along

some in the matter of reducing the cost of laying up brick, and this should be given some active attention, too. And all along the line, while knowledge of costs, and fair profit returns are essentials, we should keep ever in mind the thought that reducing costs is the big goal to strive for.

WAGE ADVANCES.

Not only is there apprehension among building material people that wage advances may curtail building operations before the year is over, but brick manufacturers seeking help in the cities find the demand for wages almost double what they were a year ago, according to some special bulletins of the Dow Service. These tell of advances being asked in the building trades ranging from 50 percent to over 100 percent above the high wages of the past year, and that a similar situation is developing among manufacturers in the matter of common labor. Even those who seek European labor from the large centers find the same demand for double wages, and those who seek for help in the south are met with a similar situation. So all indications point toward a decided wage increase among the industry which will naturally add to cost and to prices and thus multiply the troubles which may beset the goose that lays the golden egg of prosperity which comes from active building operations. It is plainly a time to move carefully in this matter and to use all practical moral persuasion to hold wages and prices to a rational level.

A BUILDING AND LOAN INSTITUTE.

Building and Loan Association work and development has reached the point that the need is being felt for an educational organization to help out in building and loan development and administration. To fill this place the American Savings, Building and Loan Institute has been organized with headquarters in the R. A. Long Bldg., Kansas City, Mo. This work of building and loan development which has culminated in the organization of a building and loan institute, has been carried on largely by organizations in the lumber industry, and so far not enough interest, seemingly, has been manifested by the brick industry in these agencies of aid for the home builder. Frank A. Chase, who has been actively employed in promoting building and loan associations through the co-operation of retail lumber organizations, is the educational director of the new institute, which has the indorsement of a number of state league of building and loan associations. Those interested in the work and desiring to inquire further may get a prospectus giving further particulars of the work by writing the American Savings, Building and Loan Institute, R. A. Long Bldg., Kansas City, Mo.

BUSINESS CROWDING.

One hears complaint that there are too many people in business. There is so much of this that it looks like every line of business and industry is overcrowded and there comes a puzzling question of what to do about it. People must have employment and must engage in business or do something for a livelihood and if all divisions of activity are overcrowded, then what?

One writer on the subject takes the stand that it is too easy for young men to get into business these days, that is to start up in business for themselves, and that the ambition to do this and the ease with which it may be done is responsible for overcrowding and presumably leads to the multitude of business failures, all of which must eventually be paid for by the public, either directly or indirectly. Some lines of business are overcrowded because it is easy to get into them,

requires but little capital. Others tempt many enterprises because they give promise of great returns. Still others seem to be the victims of professional schemers and promoters. On the whole, this is perhaps the most dangerous element, scheming promoters who organize stock companies in a community, not because the industry is needed or they expect to profit from the industry, but for the sake of getting personal gain out of promoting a business organization and inducing the people to invest their money in it.

If we can have more of our business institutions built on the basis of community needs instead of inspired by some outside promoter then we will have less overcrowding, fewer failures and a better measure of success in business undertakings generally.

ILLINOIS CLAY MANUFACTURERS' ASSOCIATION TO MEET IN CHICAGO, MAY 8TH.

THE ANNUAL MEETING of the Illinois Clay Manufacturers' Association will be held in Chicago, Tuesday, May 8, at the La Salle Hotel. The Indiana-Illinois Division of the American Face Brick Company and the Chicago Section of the American Ceramic Society will hold meetings at the same time and place. Cullen W. Parmelee, Urbana, Ill., Secretary-Treasurer of the Association, writes the program is now in process of formation, and will be given later.

FREE SCHOLARSHIP IN CERAMIC ENGINEERING.

THE UNIVERSITY OF ILLINOIS offers to each county in the State of Illinois one scholarship in Ceramic Engineering, which is awarded on the nomination of the Illinois Clay Manufacturing Association to an applicant who intends to follow the curriculum in Ceramic Engineering. The candidate must be at least 16 years of age, must be a resident of the county from which he is nominated and must meet in full the requirements for admission to the Engineering College.

Further information may be had by application to C. W. Parmelee, Secretary of the Illinois Clay Manufacturers' Association.

TRADE ASSOCIATION REPORT.

Referendum No. 41 of the Chamber of Commerce of the United States, on the report of the Committee on Trade Associations, contains an interesting discussion of trade association activities pro and con that is worthy of special study, even by those who are not called upon to vote. Voting members are asked to pass upon eight questions pertaining to trade associations and their various activities and their relations to government control and regulation. The committee report and the arguments on the negative are presented on alternate pages, and these not only make an interesting study within themselves, but there is an appendix to the report

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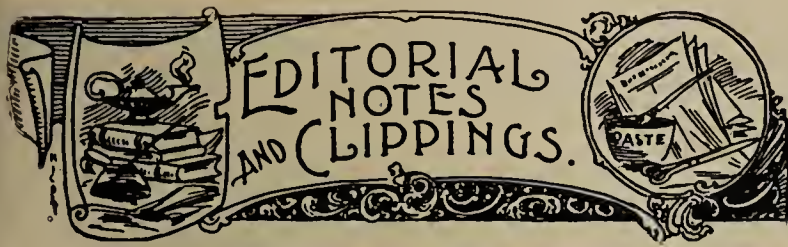
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which reviews at some length the activities of trade associations in extending industry, increasing efficiency, and in the protection of business and industry, and pertaining to statistical activities. After one has read and digested arguments and reviews, whatever questions may remain as to the advisability or the legality of trade associations of the commercial order, there is no question whatever about those associations which direct their energies toward greater industrial efficiency through education along new ideas and better methods such as are pursued by the National Brick Manufacturers' Association.

THE COUE WAY.

The celluloid frying pan prize for pulling the best one in Coue style, goes to the Hadfield-Penfield Steel Company for this one in their house organ, The American Clay Magazine: "Every day, in every way, we make it pay, when burning clay, by doing it—The Haigh Kiln Way."

FIVE MILES FROM CENTER OF BOSTON
32 Acres of Proved Clay Property.
800 ft. Frontage on Boston & Maine R.R.
Adjoins present plant of National Fireproofing Co.
Price \$30,000.00 for quick sale.
JAMES J. SCULLY, 118 First St., Cambridge, Mass.



J. F. Hunsinger, Bloomington, Ill., contemplates establishing a brickmaking plant at that place.

The plant of the American Vitrified Product Company at Lisbon, Ohio, was destroyed by fire, March 2. The loss is estimated at \$100,000.

The Union Brick and Tile Company of Birmingham, Ala., has been incorporated at Birmingham, Ala., by R. H. Elliott, Harry Watkins and Alexander McIntyre.

Dixie Brick and Tile Company, Puryear, Tenn., has completed plans for extensions to provide for an output of about 35,000 face brick and fire brick per day. O. A. Harker, Jr., is president.

J. H. Thress has reorganized the Pressed Brick Company, Tuscaloosa, Ala., equipped the plant with a stiff mud equipment, and now has his plant ready for operation. The plant has a capacity of 250,000 brick.

Rawlings & Harrison are building a new dryer at their brick plant at Albany, Ore., which will enable them to increase their capacity. They have dried their brick out in the open up to this time. They make both face and common brick and drain tile.

The Gaddis-Harrison Brick Company of Columbus, Ohio, has leased a residence at Third and Wilkinson streets, which they will at once remodel, making up-to-date offices and more adequate display and salesrooms for their face and common brick and other building materials.

George E. Winter, general manager of the National Clay Works at Mason City, Iowa, has sold his interest in the company to T. A. Potter and E. G. Dunn and has retired from the business. Mr. Potter will assume the position of treasurer. Mr. Winter has been identified with the brick and tile industry of Mason City for twenty-three years.

Work on the new big plant of the Cherokee Brick Company at Chestnut Ridge, Knoxville, Tenn., has been started and will be continued under the supervision of the Manufacturers' Equipment Company of Dayton, Ohio. The equipment will include a gas producer for burning the brick, and a Justice Radiated Heat Dryer. Roy Newman is president of the company, C. E. Campbell vice-president and J. C. Wright secretary-treasurer.

The Knoxville Brick Company, of Knoxville, Tenn., is installing machinery and making a number of improvements in the plant at Powell, Tenn., which will enable them to make ornamental brick the coming season. This company, which was established in 1888, has an enviable record for high-class brick in that section. One of their jobs last season was 350,000 brick for an immense apartment house in Knoxville. They now have a daily capacity of 80,000 brick, which will be greatly

increased when the improvements now under way are completed.

The plant of the Everhard Sand and Brick Company, Massillon, Ohio, was recently damaged by fire.

Charles Fischer, proprietor of the Fischer Brick and Pottery Works at Milwaukie, Ore., died at his home in that city February 8th.

The plant of the Colfax Drain Tile Company at Colfax, Ind., which has been idle for three years, will resume operations in the early spring.

The Bacon Hill Brick Company has been organized at Elkton, Md., with \$80,000 capital stock. James F. Evans of Elkton, and John Mattouse and C. D. Avazio of Philadelphia, are interested.

Edwin R. Merrill, Gifford, Ark., writes there is an opening for a clayworking plant there, where they have splendid deposits of clay suitable to the manufacture of pottery, face brick or fire brick.

W. W. Pace, Jr., has purchased the Tift Silica Brick Company's plant at Tifton, Ga., together with four hundred acres of land adjoining the estate. Mr. Pace will personally superintend the operation of the plant.

W. S. George, owner of pottery plants in Cannonsburg and Kittanning, Pa., and East Palestine, Ohio, announced recently completion of plans for the erection of another seven kiln pottery in East Palestine, to adjoin his fifteen-kiln plant.

The Western Clay Products Co. has recently been incorporated at Orange, Cal., and will erect a plant for the manufacture of hollow building tile, roofing, flooring and partition tile and brick. George R. Whitcomb, Box 47B, Route 2, is at the head of the enterprise.

The Standard Brick Co. of Evansville, Ind., is an ardent advocate of publicity and never loses an opportunity to boost its products, which include a fine face brick, which has been christened "Rugby" texture brick. One of the latest exploits of the company is to sponsor a basket-ball team, which adopted the name "Rugby;" the boys wore sweaters with the name embroidered on them and carried the name Rugby to success, as the champions of that district, and won the silver cup awarded the victors. The publicity received through the daily papers of their own and neighboring cities will certainly be an advantage to the company.

The city council of Chillicothe, Mo., has decided to build the Bull Thunder storm sewer of that city with burned clay segment blocks instead of concrete or "lock joint" material, after a lengthy discussion over the merits of the two materials. A representative of the W. S. Dickey Clay Company of Kansas City, was present at the meeting of the council and showed a one-reel picture of sewer construction with material sold by the Dickey Company. D. L. Haley, representing the Evans & Howard Fire Brick Company of St. Louis, and others, were before the council at the same time. The council said it would have preferred to have advertised for bids under each material, but as this was not permissible under the law it was decided to make the segment blocks the specification of material. Work on the sewer will begin as early as possible in spring.

(Continued on Page 286.)

PROTECT COSTLY KILNS—



TECKTONIUS
Kiln Band Fastener

—with the world's best band fastener, the famous wedge-action Tecktonius Lug. Read What Users Say: *** "We could not be induced to use any other" *** "We are through experimenting, we are using Tecktonius" *** "Most satisfactory lug on the market" *** Have used your lugs for thirty years—no expense for repairs" *** We are using 476 of your lugs and are placing an order for 100 more".

Add years to the life of your costly kilns. Make your bands effective. Send for our catalog and price list—today.

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U.S.A.

American No. 384

Look at its Proportions.
Look at its Capacity.
Look at its Cost Saving.
Look at the Quality of Output.

The American No. 384 Grinder will do the work of
from three to six nine-foot pans. And does the
work better and more uniformly.

It Saves 50 to 70 per cent of Power.
It Saves 75 per cent Wear and Tear.
It Saves 25 to 75 per cent Labor.
It Saves 80 per cent of Floor Space.

In Quality, Capacity, Simplicity, Economy, it can
not be equalled. It's another instance where the
"American Line" leads in cost saving equipment.

Gearing Run in Oil.
Bearings Bored, Bushed and Self Oiling.
Oil Reservoir Replenished during Operation.

Names of users and description on request—It pleases.

MANGANESE STEEL REPAIRS



Last
Longer and
are Cheaper
in the
Long Run

WE MAKE
THEM

"THE AMERICAN LINE"

Built by

The Hadfield-Penfield
Steel Co. Ohio

Bucyrus

NO VIBRATION gears running in oil, positive lubrication of bearings and generous design of shafts and bearings eliminate vibration and noisy operation. *A pencil standing on end on the die box has retained its position while one of these machines was turning out fire brick at a rate of seven thousand an hour. Have you ever seen this done on any other type of machine?* Elimination of vibration means longer life, fewer repairs and less power. Automotive Engineers have been devoting years of study and fortunes in money to decrease vibration in engines. Vibration is just as destructive in your auger machine as in your automobile.

LOW POWER COSTS

All gears have machined teeth and run in a bath of oil. All bearings are either ring or chain oiled. All shafts are extra heavy and bearings extra long, lined with high-grade babbit. All bearings are machined at one setting of the frame on a planer so that they must be in perfect alignment.

The bearings at no time can bind as there is no possibility of their being thrown out of alignment. It should follow that these new International Auger Machines are power savers, and that they are, is amply proven by statements of owners.

**Send for your free copy of catalogue showing complete
Machinery Equipment, Dryers and Kilns.**

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Pittsburgh, Pa.

New York

Toronto, Ont., Can.

ENGINEERS
and
DESIGNERS
of
COMPLETE
CLAYWORKING
PLANTS

EQUIPMENT
for
MANUFACTURING
CLAY PRODUCTS,
POTTERY,
GENERAL WARE

International



Where CLEARFIELD Pans Are Built

For fifty years we have been leading the way in Wet and Dry Pan construction. In our new plant just completed, we are now better equipped than ever for the economical production of this class of machinery. Let us help you solve your grinding and tempering problems.

Clearfield Machine Shops

Clearfield, Penna.

The Low Priced Digger For the Average Plant

A Digger and Loader especially designed to meet the requirements of the plants having capacity of from 25,000 to 100,000 per day. Fills the gap between hand labor and high priced shovel equipment.

Track or Caterpillar Mounting. Gasoline or Electric Power

Mixes the clay as it digs. Capacity up to 300 tons in 10 hours. You should have a digger this year.

BAY CITY DREDGE WORKS

2711 Center Ave.

Bay City, Mich.



Hugo Zeun of Cullman, Ala., is in the market for information in regard to a drying and burning system, and also some cutting wires.

Roscoe E. Baughn, Lyons, Ind., is in the market for some second hand dryer cars, double deck, 24-inch gage and also some second hand rails.

C. C. Cocke, Crofton, Fluvanna County, Va., wants to purchase a complete second hand equipment for making soft mud brick, including brick machine, pug mill, disintegrator, mold sander, etc.

It has been reported that the Jointless Fire Brick Company of Chicago, Ill., has purchased a two-acre tract at Trenton, N. J., and it is their intention to build a plant to cost close to \$100,000.00. The plant is to be the most modern of its kind and will have an output of two carloads a day.

A. T. Swall of Woodenfield, Ohio, and G. F. Brandit of Akron, Ohio, have gone to Erwin, Tenn., to take up duties at the Southern Potteries; Mr. Swall becoming superintendent and Mr. Brandit general manager, succeeding, respectively, E. J. Owen, Jr. and Sr. C. F. Foreman recently purchased the controlling interest in the plant from E. J. Owen, Sr., and has announced that the local operations will be in charge of Messrs. Swall and Brandit, and that he himself will have charge of the sales agency at Canton, Ohio. The plant is in fine condition; and it is said that, with a continuation of the present development, there is a possibility of another large plant being added to the present one in about a year.

The Acme Brick Company, which has headquarter offices in the First National Bank building of Fort Worth, Texas, has in operation plants at Denton, Bennetts and Millsap. The combined annual capacity of the plants is 45,000,000 bricks, or 15,000,000 each. The plants manufacture high grade dry-face and stiff mud-face brick, No. 1 fire brick shapes and molded special shapes. In the manufacturing departments there are rotary kilns for calcining clay, dry pans, two and four-mold dry presses, stiff mud units and waste heat and hot floor dryers. The Denton and Millsap plants manufacture all kinds of bricks; the Bennett plant makes only stiff mud and face brick from red burning shale with shades ranging from light to blue-black. They are of seven different textures.

Announcement has been made of the sale of the Sharon Clay Products Company plant at Rose's Crossing, southwest of Sharon, Pa. to H. R. Beegle and associates of New Galilee, Pa. The transfer was made March 1 and the new company will begin operations at once and employment will be given to about 100 men. The plant has a yearly capacity of about 12,000,000 fire bricks. The original plant was erected by the late J. V. Rose of Sharon, twenty-five years ago. In 1917 title was transferred to the Sharon Clay Products Company and the plant was operated intermittently, but had been closed for more than a year. The new company starts under bright prospects and has many orders booked.

The Eastern Clay Products Company property, New Brunswick, N. J. was sold at a special master's sale to the Atlanta Clay Products Company of New Jersey, for \$845,511. The purchaser is a corporation recently organized in New Jersey, and it is the plan of the company to continue the plant in operation. The Eastern Clay Products Company is situated along the South River-New Brunswick turnpike and comprises 227 acres of valuable clay land, several factory buildings and a variety of clay products. The company was engaged in the mining of clay and the manufacture of clay products, but for the past few years has been running behind financially. It is proposed by the new owners to continue the operation of the plant by leasing the property to the Eastern Clay Products Company. It is hoped in this way to keep the industry alive and to continue the mining of clay.

NEW CONCERN IN CLAYWORKING FIELD.

Mr. H. M. Robertson and Mr. Chas. M. Pease, both formerly of American Dressler Tunnel Kilns, Inc., announce the opening of their office at 705 Century building, Cleveland, Ohio, under the name of Robertson-Pease Co., designing and constructing engineers.

Reduce Your Burning Costs

We have positive proof that—

One of our kilns is equal in durability to two average kilns.

That two of our kilns in operation will produce as much ware as *three* average periodical kilns, and that this saves first cost at the rate of 33 1-3% for your kilns on a CAPACITY BASIS.

Reduce Your Burning Costs

We have positive proof that—

We can dry and burn the ware with less than half the fuel required for average periodical kiln operation.

That our system delivers the goods.—It lasts—stays put—is easy to build and operate—and means more than a “*saving in Burning Costs.*”

Reduce Your Burning Costs

We Can Refer You—

To many satisfied users on whose plants you can see for yourself how economical and serviceable in every way is the MINTER SYSTEM.

Write for complete details and plants using our system.

THE MINTER SYSTEM

—200 lbs. coal per ton of ware—

Albany = GEORGIA = Columbus



Those who have used it frankly say,
Ours is the best for gathering clay.

These two views were taken at the plant of The Cleveland Builders Supply & Brick Co., Cleveland, Ohio. Our drag line excavator installed there displaced two steam shovels.

Our machine was installed to dig a sixty-five foot bank of clay that previously had to be worked in terraces with steam shovels, on account of "cave-ins" and slides. The Schofield-Burkett Excavator is shown doing the work in this sixty-five foot bank (replacing the shovels) without any danger of slides. Furthermore, the machine is giving a thorough mixture of the different strata of clay.

Our Proposition: We agree to superintend the installation of a machine for you and demonstrate that we will load your material cheaper than any other method. We guarantee to save time and money.

The Schofield-Burkett Construction Co. Macon, Ga.

A. J. ALSDORF CORPORATION
404 So. Wells Street, Chicago

Representatives in Illinois, Michigan and Indiana and
Exclusive Foreign Distributors.



N. B. M. A. NUMERICAL ROSTER

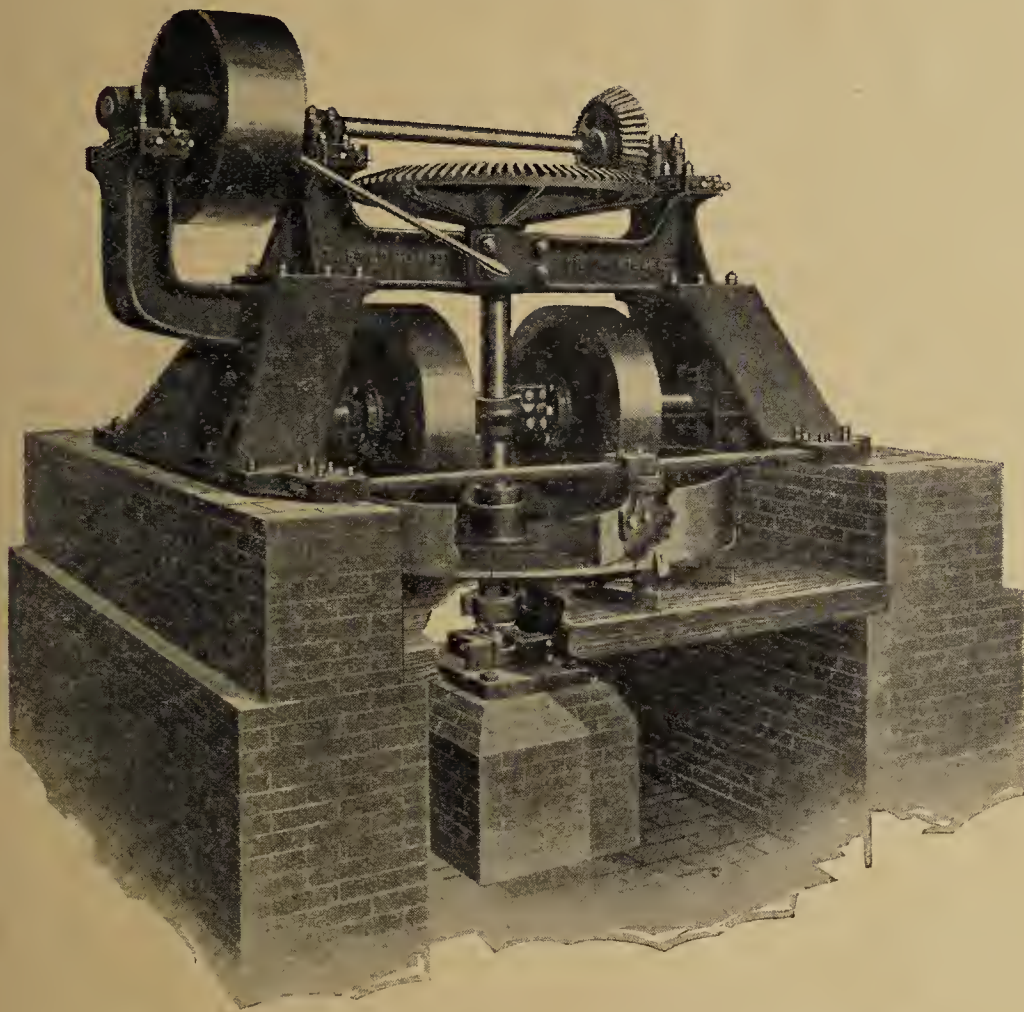
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Name	Firm	Town
241. EDWIN L. MITCHELL,	Mitchell Brick Co.,	Cincinnati, O.
242. R. A. MOORE,	Duffney Brick Co.,	Mechanicsville, N. Y.
243. A. W. KEESE,	Collinwood Shale B'k & Sup. Co.,	Cleveland, O.
244. J. M. McKINNEY,	Burton-Townsend Co.,	Zanesville, O.
245. O. B. ROBERTSON,	Sunset Brick & Tile Co.,	Gonzales, Tex.
246. CHAS. EISELE,	Premier Press,	Cleveland, O.
247. F. L. REPPERT,	Perry Mfg. Co.,	Uniontown, Pa.
248. GEO. W. KELLER,	Brown Inst. Co.,	Philadelphia, Pa.
249. GEO. A. PARRY,	Parry Brick Co.,	Boston, Mass.
250. T. J. PARADINE,	Victory Brick Mach. Co.,	Erie, Pa.
251. WM. CLERKIN,	Taplin-Rice-Clerkin Co.,	Akron, O.
252. H. F. LANGENECKER,	Cambridge Brick Co.,	Cambridge, Md.
253. G. W. DAVISSON,	The Fairb'ks Steam Shovel Co.,	Marion, O.
254. HILDA LINTILA,	Burton-Townsend Co.,	Ashtabula, O.
255. W. H. McDUGAL,	W. H. McDougal Co.,	North Robinson, O.
256. BRYAN WATERMAN,	Landscape Architect,	Buffalo, N. Y.
257. O. P. BECK,	Galion Iron Works Mfg. Co.,	Galion, O.
258. J. P. CAHOON,	Salt Lake Press B'k Co.,	Salt Lake City, Utah.
259. J. FRED SMITH,	Smith Brick Co.,	Omaha, Neb.
260. ENOS M. JONES,	Altoona Brick Co.,	Altoona, Pa.
261. E. O'NEILL KANE, JR.,	Kushequa Brick Co.,	Kushequa, Pa.
262. A. H. STANG,	Bureau of Standards,	Washington, D. C.
263. W. CARVER, C. B. M. A.,		Cleveland, O.
264. JOS. ENTWISTLE,	Terre Haute Vit. B. Co.,	Terre Haute, Ind.
265. GEO. J. MARKLEY,	Fed. Clay Prod. Co.,	Mincral City, O.
266. Wm. D. GATES,	Amer. T. C. & Ceramic Co.,	Chicago, Ill.
267. A. W. MITCHHART,	Sanderson Cyclone Drill Co.,	Orrville, O.
268. M. B. GARBER,	Sanderson Cyclone Drill Co.,	Orrville, O.
269. C. M. JOHNSON,	West. E. & Mfg. Co.,	Pittsburgh, Pa.
270. CHAS. W. SLAGLE, JR.,	Burns & Russell Co.,	Baltimore, Md.
271. W. R. RUSSELL,	Burns & Russell Co.,	Baltimore, Md.
272. W. H. KENT,	The Weller Co.,	Chicago, Ill.
273. JULIUS H. BACH,	Bach Brick Co.,	Chicago, Ill.
274. ALFRED BARUCH,		New York, N. Y.
275. J. B. WILCOX,	Alliance Clay Products Co.,	Alliance, O.
276. RICHARD BARKER,	Alliance Clay Products Co.,	Alliance, O.
277. ARTHUR SMITH,	Alliance Clay Products Co.,	Alliance, O.
278. DONALD PATRICK,	Alliance Clay Products Co.,	Alliance, O.
279. G. E. GOLDNER,	Continental Clay Co.,	Canton, O.
280. GEO. W. GURNEY,	Alliance Clay Products Co.,	Alliance, O.
281. HOWARD BURSON,	Alliance Clay Products Co.,	Alliance, O.
283. F. L. WARNER,	Standard Brick Co.,	Memphis, Tenn.
284. C. B. THWING,	Thwing Instrument Co.,	Philadelphia, Pa.
285. L. E. RODGERS,	L. E. Rodgers Eng. Co.,	Chicago, Ill.
286. D. KNICKERBACKER BOYD,		Philadelphia, Pa.
287. RUFUS P. MORTON,		Princeton, Minn.
288. A. J. BENTLEY,	The Ohio Galvanizing & Mfg. Co.,	Niles, O.
289. E. J. JONES,		Canton, O.
290. ELISHA K. KANE,	Kushequa Ceramic Co.,	Kushequa, Pa.
291. WM. S. DICKOVER,	Wilkes-Barre, Pa.	
292. GEO. T. DICKOVER,	Wilkes-Barre, Pa.	
293. L. E. OLDHAM,	Bonnot Co.,	Canton, O.
294. JNO. H. HOLMAN,	Hebron Fire Brick Co.,	Hebron, N. D.
295. DAY A. ORR,	The Osgood Co.,	Marion, O.
296. GEO. DAY,		Cleveland, O.
297. C. H. ANDREWS,	N. Castle M. & C. P. Co.,	New Castle, Pa.
298. C. NORRIS,	New Castle M. & C. Prod. Co.,	New Castle, Pa.
299. TEDDY RANDALL, Jr.,		Indianapolis, Ind.
300. C. W. GANNETT,	Wellington Mach. Co.,	Wellington, O.
301. COL. EDWARD ORTON, JR.,		Columbus, O.
302. T. M. LOW,	Amer. Dressler Tunnel Kiln, Inc.,	Leonia, N. J.
303. PAUL A. MEEHAN,	Am. Dressler T. Kiln, Inc.,	Lakewood, O.
304. PHILIP DRESSLER,	Am. Dressler T. Kiln, Inc.,	Cleveland, O.
305. RALPH M. EVANS,	The Burton-Townsend Co.,	Zanesville, O.
306. WM. A. LUTZ,	The Burton-Townsend Co.,	Zanesville, O.
307. F. N. SHANKLAND,		Willoughby, O.
308. R. J. DAWSON,		Zanesville, O.
309. G. E. LUCE,		Chicago, Ill.
310. H. K. LYNN,	Summitville Face Brick Co.,	Summitville, O.
311. W. T. DEMUTH,	Canton Brick & F. Co.,	New Philadelphia, O.
312. CLYDE D. BRAUND,	Cleveland B. & C. Co.,	Cleveland, O.
313. C. U. HENDERSHOT,	Cleveland B. & C. Co.,	Cleveland, O.
314. JOHN GREETHAM,	Wellington Mach. Co.,	Wellington, O.
315. SYDNEY A. LINNEKIN,	Babson Inst.,	Wellesley Hills, Mass.
316. F. W. DUCAT,	W. H. Pipkorn Co.,	Milwaukee, Wis.
317. R. E. CLISBY,	Wellington Mach. Co.,	Wellington, O.
318. WALTER G. MEYER,	W. H. Pipkorn Co.,	Milwaukee, Wis.
319. A. J. MILLER,	Bucyrus, Co.,	South Milwaukee, Wis.

(Continued on Page 290.)

THE NAME TORONTO

ON A DRY PAN
MEANS
A BETTER PAN FOR THE
MONEY



TYPE 'B' 10FT. DRY PAN

We will see you at the convention again next year.
In the meantime send us your inquiries.

THE TORONTO FOUNDRY & MACHINE CO.
TORONTO, OHIO

Mention THE CLAY-WORKER.

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

N. B. M. A. NUMERICAL ROSTER

(Continued from Page 288.)

In addition to the foregoing there was listed on the C. B. M. A. roster the following delegates who did not register with the N. B. M. A., which with the visiting ladies numbering seventy or more, makes the total attendance very nearly five hundred, for there are always a few who, from carelessness or for reasons of their own which are never made known, do not register at all:

J. A. TAYLOR, Brick Mfrs.' Assn., Hollywood, Cal.
L. S. COLLINS, Los Angeles Brick Co., Los Angeles, Cal.
C. W. KING, Conn. Mfrs. Assn., Hartford, Conn.
JAMES MACPHERSON, C. P. Merwin Brick Co., East Berlin, Conn.
H. R. CLARK, C. P. Merwin Brick Co., East Berlin, Conn.
J. E. REYNOLDS, Stiles & Reynolds Brick Co., North Haven, Conn.
E. BACH, Bach Brick Co., Chicago, Ill.
EDWIN BOHNSACK, Carey Brick Co., Chicago, Ill.
W. G. BOHNSACK, Carey Brick Co., Chicago, Ill.
FRED C. BLAUL, Lake View Brick Co., Chicago, Ill.
FRED M. LUTTER, Lake View Brick Co., Chicago, Ill.
ALFRED LUTTER, Lutter Brick Co., Chicago, Ill.
HENRY LUTTER, SR., Lutter Brick Co., Chicago, Ill.
GRAY TUTHILL, Tuthill Bldg. Material Co., Chicago, Ill.
R. LABAHN, John Labahn Brick Co., Chicago, Ill.
WM. SCHLAKE, Illinois Brick Co., Chicago, Ill.
W. F. SCHLAKE, Illinois Brick Co., Chicago, Ill.
C. B. OBERMEYER, Illinois Brick Co., Chicago, Ill.
O. M. ALSIP, Illinois Brick Co., Chicago, Ill.
JOHN AREGOOD, Illinois Brick Co., Chicago, Ill.
G. F. PERKINS, Illinois Brick Co., Chicago, Ill.
L. E. PIPIN, Illinois Brick Co., Chicago, Ill.
JULIUS GUTOWSKI, Illinois Brick Co., Chicago, Ill.
W. C. WILLER, Illinois Brick Co., Chicago, Ill.
RALPH ELLIS, Illinois Brick Co., Chicago, Ill.
HORACE ALSIP, Illinois Brick Co., Chicago, Ill.
E. C. KASTEN, Illinois Brick Co., Chicago, Ill.
C. E. CARTER, Peoria Brick & Tile Co., Peoria, Ill.
WALTER S. MOELLERING, Wm. M'ering's Sons, Fort Wayne, Ind.
TOM W. GREEN, Tom Green Brick Co., Sioux City, Ia.
F. H. HAAR, Busse Brick Co., Covington, Ky.
HERMAN A. BROERING, Broering & Meier, Covington, Ky.
T. E. HOWINGTON, Coral Ridge Clay Prod. Co., Louisville, Ky.
C. M. FIELD, Amherst Brick Co., Springfield, Mass.
C. H. BRYAN, Mercier-Bryan-Larkins Brick Co., Detroit, Mich.
JOHN C. CORNING, Chaska Brick & Tile Co., St. Paul, Minn.
OTTO C. OEHLER, Continental Brick Co., St. Louis, Mo.
HOWARD I. WHEAT, Ent. Brick Works, Mountain View, N. J.
J. M. PURCELL, Duffney Brick Co., Mechanicville, N. Y.
E. C. ROBERTS, Cleveland Builders' Sup. & B'k. Co., Cleveland, O.
W. A. HOWELL, Collingwood Brick & Clay Co., Toledo, O.
E. S. BARKWILL, Cleveland Builders' Sup. & B'k. Co., Cleveland, O.
R. J. DAWSON, Cleveland Builders' Sup. & B'k. Co., Cleveland, O.
S. W. GIBSON, Cleveland Builders' Sup. & B'k. Co., Cleveland, O.
JOHN M. STONER, Cincinnati Builders' Sup. Co., Cincinnati, O.
R. L. HARE, Wyandot Clay Products Co., Upper Sandusky, O.

(Continued on Page 292.)

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Arcade.

Hazleton, Pa., Office
705 Markle Bank Bldg.

THIS WILL
INTEREST
EVERY
BRICK
MAN



Doubly Fortunate is the Brick Manufacturer Who Operates an AutoBrik Machine

There appeared in the January issue of the Architectural Record, the first of a series of advertisements to further the demand and sale of AutoBrik—the "Common Brick with Face Brick Characteristics."

This advertising reaches the Architect and the Contractor—who play such important parts in specifying the materials to be used in large building contracts. The advertising is directed entirely toward AutoBrik and those

firms who operate AutoBrik Machines and can supply AutoBrik. Our name does not even appear.

This campaign is further evidence that the brick manufacturer who is operating an AutoBrik Machine is in a fortunate position to out-general his competitor in both output and sales.

The list of new AutoBrik installations is steadily—and, let us say, rapidly—growing. Your name should be included.

Lancaster Iron Works, Inc.

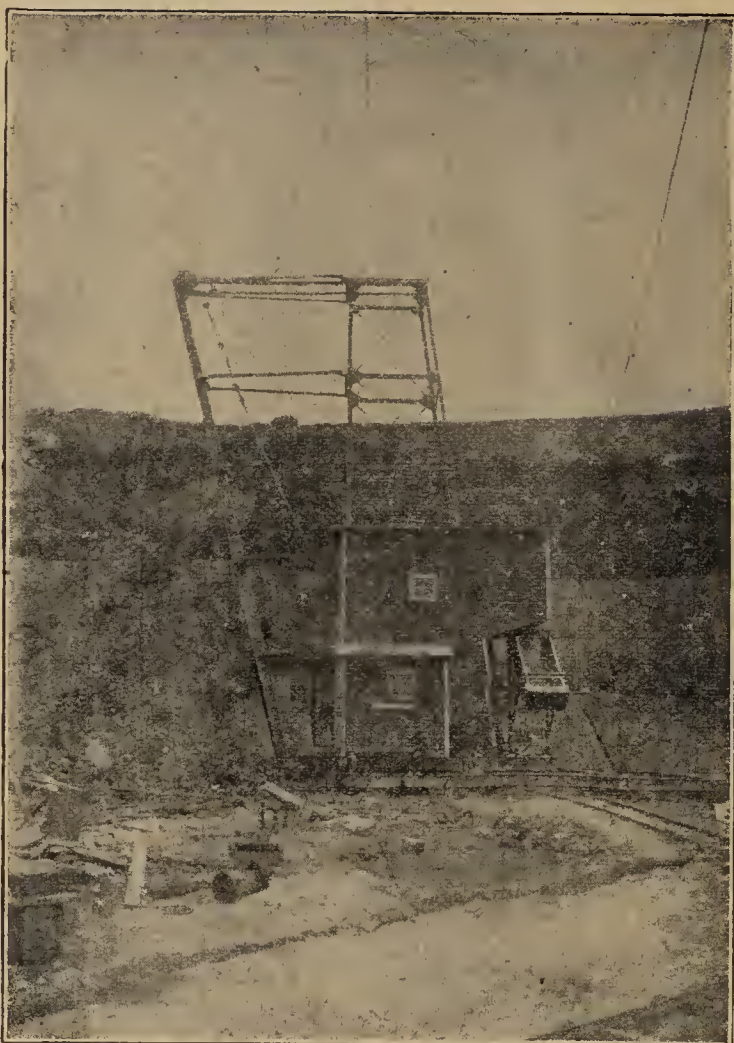
Lancaster, Pennsylvania, U. S. A.

Brick Machinery Dept.

James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.

AutoBrik Machine



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

N. B. M. A. NUMERICAL ROSTER

(Continued from Page 290.)

Name	Firm	Town
O. T. WITTER,	Met. Pav. Brick Co.,	Canton, O.
H. J. FARR,	Cleveland Builders' Sup. & B'k Co.,	Cleveland, O.
E. E. ROLL,	Cleveland Builders' Sup. & B'k Co.,	Cleveland, O.
CHAS. FRANCIS,	Francis Vitric Brick Co.,	Muskogee, Okla.
CHAS. B. Siner,	Jos. T. Byrne Estate,	Philadelphia, Pa.
GIRARD SEITTER,	F. Seitter's Sons,	Philadelphia, Pa.
J. W. C. WEST,	Eureka Brick Co.,	Norfolk, Va.
J. A. PUGH,	Nensemmond Brick Corp.,	Norfolk, Vt.
C. F. ERICKSON,	J. T. Davie Brick Co.,	Spokane, Wash.
GEO. E. SUTHERLAND,	Stand. B'k & Sup. Co.,	Charleston, W. Va.
H. C. KENYON,	Stand. B'k & Sup. Co.,	Charleston, W. Va.
FRED S. PRICE,	Price & Smith,	Toronto, Ont.
G. J. SMITH,	Price & Smith,	Toronto, Ont.
H. H. ROSENBERG,	Brick and Clay Record,	Chicago, Ill.
DAVID B. GIBSON,	Brick and Clay Record,	Chicago, Ill.
M. E. GAMMON,	Brick and Clay Record,	Chicago, Ill.
H. A. JUNG,	National Clay Prod. Ind. Assn.,	Chicago, Ill.
RALPH P. STODDARD,	Common Brick Mfrs. Assn.,	Cleveland, O.
E. A. KRAUSE,	Common Brick Mfrs. Assn.,	Cleveland, O.
JOS. PERETZ,	Common Brick Mfrs. Assn.,	Cleveland, O.
H. W. CONWAY,	Common Brick Mfrs. Assn.,	Cleveland, O.
A. H. JENKINS,	Nichols-Moore Co.,	Cleveland, O.
D. H. NICHOLS,	Nichols-Moore Co.,	Cleveland, O.
D. T. HOLLOWELL,	Amer. Face Brick Assn.,	Chicago, Ill.
HERBERT V. KAEPPEL,	Brick and Clay Record,	Chicago, Ill.
H. H. WIKLE,	Peoples Gas Light & Coke Co.,	Chicago, Ill.
G. A. BOLE,	United States Bureau of Mines,	Columbus, O.
H. D. Kerr,	Nichols-Moore Co.,	Cleveland, O.

SAFETY COUNCIL MEETING.

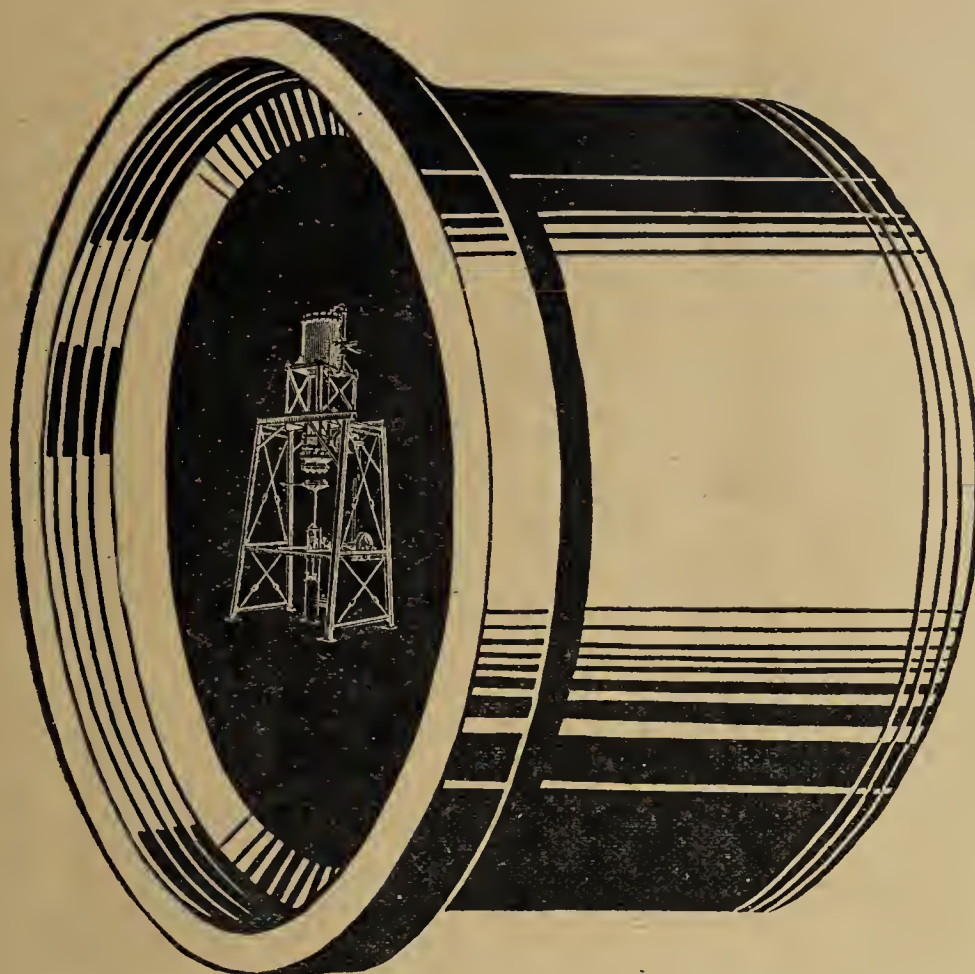
THE NATIONAL SAFETY COUNCIL with headquarters at 168 North Michigan avenue, Chicago, announces that the next annual Safety Congress will be held at Buffalo, N. Y., October 1-5, with headquarters at the new Statler hotel.

For the Furnace Updraft Kiln

Whenever you get tired of melting your arch heads to get the centers hot, then try my system of protecting arches. It protects the arch-heads while you push the centers along, consequently saves time and fuel.

It works equally well on either natural or forced draft. I figure that a 23-ft. kiln set forty high can be burned with natural draft in seven days and with 600 pounds soft coal per 1,000 brick. Order now and save money. The summer price takes effect April 15. Complete description on request.

F. W. GLECKLER
OAK HARBOR, OHIO



**As surely as day follows night
a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

UNITED CLAY MINES CORPORATION DECLARES DIVIDEND.

AT a meeting of the board of directors held February 7th, 1923, at its offices in Trenton, a dividend of 8 percent was declared on the preferred stock and 10 percent on the common stock for all subscribers of record as of December 31st, 1922.

The directors report sufficient orders on hand to keep the various mines going to full capacity for the current year and in fact, have recently had to increase production very greatly at several plants to keep pace with ever-increasing demands.

The past six months' business has broken all previous records as clays are being used more and more to substitute other raw material in many industries. It was this fact which brought about the formation of the present company a few years ago, which is the successor to the company formerly known as the Crossley Mining Co. There was seen a need for one concern to place itself in position to be able to mine and sell high grade clays of every kind for every purpose. Formerly the company sold almost exclusively among the pottery, steel and refractories industries, but within the last two years has opened a number of mines and is now able to supply clays of the highest grade for a wide range of uses, such as the paint, rubber, paper, asbestos, fire brick, fire cements, wall board, roofing materials, sheathing paper, all classes of pottery, not only for ware, but for saggers in which the ware is fired, floor and wall tile and electrical procelain. Clays are also produced for writing crayons, window shades, print goods, phonograph records, lead pencils, glass melting pots and the bleaching industry; also for plaster, plaster partition blocks, architectural terra cotta and for the enameling industry, etc.

The company has under way broad plans for further expansion for the current year, including the equipment of three new properties in the south and west, with plant buildings, digging and refining equipment, railways, etc.

The business was founded in 1905 by its present head, Mr. George C. Crossley, president and general manager. C. C. Engle is general sales manager and Mr. Archer Coddington is mines manager. Both the latter are officers of the company. Although the company is 50 percent oversold at several of its mines, they are not boosting prices except where they have been below cost, because they believe that a price boosting orgy such as occurred in 1920 will kill the goose, and that the country will experience another 1921 in 1924. This, they think, applies particularly to the building industry.

The signs of the times point toward lots of sewer work, as well as street building, this year.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terra cotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

The book also contains a supplement on the subject of Cracking, Its Cause and Prevention.

Price \$5.00

T. A. Randall & Co.

Publishers Indianapolis, Ind.

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 79

INDIANAPOLIS, MARCH 28, 1923.

No. 4

BRICK WITHOUT LUMBER WITHIN

A Happy Combination for the Promotion of Better Building in New Orleans. Unusual and Fine Show Room of the Salmen Brick and Lumber Company Which has Proven Very Alluring. ❀ ❀ ❀ ❀ ❀ ❀

THE ATTRACTIVE display of building materials is a problem which has taxed the gray matter of the captains of the brick and building industry for years past, and many clever exhibitions have been made in the effort to catch and hold the attention of the building public. Something new is always attractive and the reader will see by the photograph on the front cover page that the fertile brain of Fred Salmen of the Salmen Brick & Lumber Company of New Orleans has introduced something new in the Pelican City in the way of a brick building for show purposes.

The exterior is an attractive combination of brick and terra cotta, while within is an equally interesting exhibit of a modern home in which the lumber products of the company are shown to excellent advantage. The front of the building consists chiefly of plate glass windows through which the passer-by may see the unique display within. It is so unusual that the casual visitor seems impelled to stop and take a look, and that, of course, is what is most desired.

The display proved so attractive that for weeks after the building was completed and the exhibit installed it was found

necessary to keep the show room open evenings to accommodate the crowds which thronged to it throughout the day and evening. As the accompanying pictures show, the inner display includes a complete home with the exception of a bath room and is built of materials produced and handled by the

Salmen Brick & Lumber Company. The rooms are artistically furnished, the furniture being neat and well arranged. There is a family room with an open fireplace which affords an opportunity for displaying Salmen pressed brick. There is an arched recess in which a writing desk and bookcase appears. In the hallway are kitchen cabinets, work tables, cedar lined closets, linen closets, etc. In the dining room there are china closets which not only fill the corners of the room, but add to the attractiveness. The bedroom is conspicuous by the absence of the bed; in fact very little furniture being required for this room, as it contains

a built-in dresser, chiffonettes, and a concealed Murphy in-a-door-bed.

The breakfast room contains a pullman table with seats attached to the wall, while in the kitchen is the most modern cabinet available. The brick mantels give a most homelike



Hallway of the Salmen Brick & Lumber Company's Display Room.

atmosphere which is enhanced by the fine oak floors and trims. The entrance hallway and reading rooms are floored with oak. The dining room with edged grain hard pine floor, and the breakfast room and kitchen with maple; the bedroom with beech, and the sun room, which is at the end of the hallway, is floored with birch.

The main building is 110 feet by 37 feet and faces Carrollton Ave., which is one of the most heavily traversed streets in the city. The display section is 65 feet in length. The exterior of the building is of face brick manufactured by the Salmen Brick & Lumber Company, set in varying styles and patterns, giving the prospective home-builder a very good idea of the pleasing effects possible with good brick work. All in all, it is a "Complete Home Show" which enables prospective builders to visualize the beauties of brick for exterior work and high grade lumber for interior finish, a very happy combination, for the Salmen Brick & Lumber Company are the largest manufacturers and dealers of both materials in Louisiana, so can consistently advocate "Brick without and Lumber within" in the building of modern homes.

SALVAGE VALUE OF BRICK.

The monthly bulletin issued by the National Paving Brick Mfrs. Association under the title of Dependable Highways,



Fritz Salmen, Slidell, La.

in a recent review of the subject of salvaging brick from old pavements, furnishes a splendid illustrative example of the salvage value of brick wherever and however they are used.

While their story in this case pertains specifically to old brick pavements and how the brick from these have been successfully used in new pavements, may seem for the time being to interfere with the sale of new brick, helps promote public economy and is in the final analysis of itself good argument in favor of the future use of brick.

We find much more of the same situation in connection with building operations. There are times when seemingly second hand brick interferes with the sale of new, but wherever this happens the incident serves also to demonstrate the salvage value of brick and to furnish an argument in favor of using brick in building operations.

Even in refractory lines where brick must be reset from time to time there is quite a percentage of the old brick which can be reused directly in the same work, and finally the broken parts can be pulverized and utilized in mixing mortar for bonding. Also all burned clay products can be reduced to a splendid road metal. So there is some usefulness in it even where it is broken up and crushed into small particles.

The salvage value of brick, whether for paving, for sewer work or for refractory purposes, is one of the good arguments in favor of its wider use.

MIXING BRICKS WITH IMAGINATION.

Manthei Howe.



OR ONCE TOM MACKEY ascended the stairs to his flat without cussing out the fog of cooking odors that hung in the dim hallways.

He had something momentous on his mind today. Something that dwarfed everything else into insignificance and made him whistle triumphantly as he took the last flight of steps, two at a time.

"Hurray, Daphne," he called, as he threw open the door of the spick and span four-rooms-and-bath. "We're on the upgrade at last!"

Without waiting for reply he seized the golden haired young woman seated beside the window mending socks. The mending basket was knocked over, spilling the contents over the floor as young Mackey dragged his wife to her feet and began spinning her about the room, shouting at the top of his voice, "The Campbells are coming, yoho, yoho."

Laughing and breathless, Daphne set her heels down and shoved with all her might.



The Dining Room of the Salmen Bungalow with a glimpse of Living Room.

"For heaven's sake, Tom," she puffed, "stop whirling me around. I'm so dizzy I'm cross-eyed. What's the matter with you, anyhow?"

Tom seated himself in the chair built for two and dragged her down on his lap.

"Listen, my child, and you shall hear," he told her. "It's come at last. I'm promoted. Old Dixie B. has begun to realize that I've got something in my head beside the ability to tote up a column of figures. He's taken me out of the clerical department and given me a whirl at the selling end."

"Oh, Tom!" Daphne's blue eyes were wide and shining. "Now you'll show them."

Young Mackey's grin faded. His eyes grew tender.

"You think your hubby is a world beater, don't you, Daphy?"

"I don't just think so, I'm sure of it," she declared staunchly.

"Well, I'll have to make good now." He squared his shoulders. "It means an increase in salary and commissions. We'll be able, one of these fine days, to buy that little house over on the west side."

"You know I'd think that heavenly," Daphne conceded.

"But this flat will do if you are just happy in your work."

Tom hugged her.

"Daphne, you're one good scout," he told her huskily.

Twilight found them, dinner forgotten, still planning the things they would do. Tom was wildly enthusiastic over the new job. And that enthusiasm held for a month or six weeks, then his spirits began to lag.

"Tired, Tom?" Daphne wanted to know one evening as he sat slumped beside the window.

"Not a bit," he protested, with abruptly assumed gaiety that did not fool her for a moment. "I feel fine."

But finally there came an evening when Mackey was too blue and discouraged to pretend.

"Guess I'm a dud, Daphy," he confessed. "I don't seem to get the knack of the game. Old Dixie B. says I'm getting along all right, but it doesn't look very darn all right to me. Three or four things rather got my goat today. I ordered bricks for two fireplaces for that Mrs. Chichester. She picked out the brick and tile herself, yet today she came down to the office crabbing about the color of the brick. She doesn't like the fireplaces at all, she says, now that they are finished. They don't look as she expected."

Tom sighed.



The Living Room of a Salmen Bungalow, Brick Mantel Obscured by Flowers.

"On the heels of that Judge Allender came over to select brick for that new home he is going to put up on the north side. He changed his mind as often as a flapper powders her nose. I don't know now what he'll buy. I couldn't sell him definitely. I just don't seem to have the hang of the game. I wish I was back with the clerical bunch. I know that work anyhow."

"Hush," ordered Daphne, holding a soft pink palm over his lips. "Don't talk like that, Tom. Two months isn't very much time to spend in acquiring the knack of handling new work, is it? You'll soon hit your stride and then you'll be all right."

"I'll hit my stride, all right," he grunted. "I'll slide right down the chute. I may have to hunt a new job."

They went to bed early that night. Tom to writhe and groan in troubled sleep, while Daphne lay staring wide-eyed into the darkness. If only she knew more about building supplies. There must be some key that would open the puzzle.

It was long past daylight before she fell asleep. All that morning in her work about the small flat she mulled the problem over in her mind. Washing dishes, sweeping and dusting failed to give her a saving hunch.

About 3 o'clock she determined to go to the corner magazine stand and see if she could not find something on building supplies. At first nothing seemed to fill the bill. In spite of the clerk's obvious impatience she leafed over the periodicals carefully. An editorial in the last one caught her eye. She read it through, then bought that and three or four other magazines she had previously discarded.

When Tom returned home at 6 he found her on the floor with open magazines spread about, busily jotting something down on a scratch pad.

"You'll have to help me get supper tonight, Tom," she greeted him. "I've been busy."

"What are you doing? Writing a story?"

"No-no. Just taking some notes. Say, Tom, how do you sell bricks and shingles?"

"What do you mean—how do I sell them?"

"Well, from colored pictures or samples or catalogues," she explained.

"Samples. We have a stack of brick of various kinds, and then one or two companies send us colored booklets."

"Then I'm all right," declared Daphne. "I wanted to make sure. You see, I've been thinking about your work and reading about it all afternoon, and I've come to the conclusion that



Fred Salmen, New Orleans, La.

part of the trouble is that you don't know how to sell the people what they want."

"You've said it. You're dead right," conceded Tom, with a wry grin.

"I didn't mean it the way it sounds, Tom, and you know it. What I meant to say was that you and the other people down at the Dixie B. Wayner Co. handle the various supplies so much that you know just how certain kinds of brick will look when piled up. You know what kind of a hearth a certain tile of this or that color will make. You have in your mind a clear picture of a roof made of copper shingles, natural colored wood shingles, the various stained shingles, and so on. In other words, you are so accustomed to seeing the samples in a completed work that now you can easily picture the result in your mind even from a glimpse at the sample. Well, that's the trouble."

Tom raised questioning eyebrows.

"Your customers can't get the picture in their mind," explained Daphne. "They see the samples and then are disappointed when the brick house or wall or fireplace is finished. The sample and the finished job don't seem to jibe.

(continued on page 396)

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Two.

Labor, Material and Overhead—The Cost of Production.



OUR DISCUSSIONS have developed this definition of costs; it is the sum of all expenditures incidental to production. Its chief functions may be summarized as follows:

1. To establish the price.
2. To point out any wastes or inefficiencies which may exist in the operation of the business.
3. To serve as a measure or guide in the conduct of the business.

The rate of profit to charge in normal times when the supply is steady can be determined through the medium of the cost and financial statements. Formerly, it was thought sufficient to obtain a statement of the condition of the business once a year. Some brickmakers still follow this practice. But experience has taught us the wisdom of getting an operating statement once a month if possible. This statement reports the assets and the liabilities of the company, the profit or loss during the month, the profit to date, the surplus and the indirect and direct expenses incidental to production. In order for this statement to attain any degree of accuracy it is necessary to have a fundamentally correct cost system on which to draw for information.

The Relation Between Costs and the General Accounts.

In Chapter 1 the distinction was made between general accounting and cost finding. There it was pointed out that general accounting had to do with totals, and with the condition of the business as a whole, while cost finding had to do with the details of production as related to manufacture. The one is in a field of general accounting; the other deals with practical work. But general accounting and cost finding are closely related as will be seen very shortly.

The balance sheet contains, among other assets, the item of machinery and equipment. This is a fixed asset as distinguished from raw material which is a current asset. That is, the investment in machinery and equipment is more or less permanent as it would be practically impossible to sell the machinery and equipment and get the full value or the original price paid. But this is not a fixed asset in the sense that the money value remains the same throughout the time the man is engaged in business. The machinery and equipment is subject to wear and tear which should be accounted for and properly charged off. The statement of the original value of the machinery and equipment and the total depreciation on this equipment from year to year belongs to general accounting. But the determination of the rate of depreciation on each item of machinery and equipment is distinctly a cost-keeping function. In this case it is clear that the general financial statement is dependent on the cost system for its accuracy.

Correct Financial Statement Impossible Without Cost Statement.

It is only by means of a properly operated cost system that the amount of work completed to date can be determined. This work completed is the basis for the sales figure which the accountant used in determining the profit for the year. Otherwise, the amount of work done is bound to be a guess. It is unsafe not to know the exact profit you have made at the end of a given period.

It is by means of the cost system then that the effect of any one part on the whole business is determined. In times of depression the cost statement becomes indispensable if any retrenchment is to be brought about.

If conditions are such that there is little business to be had, it is possible to reduce the direct cost by hiring fewer men or laying off some that are already on the payroll. But overhead cannot be reduced in the same way. You cannot cut out the light bill altogether, order your telephone taken out, do away with your heating, stationery and printing bills. You cannot dispense with your bookkeeper. You have to continue to draw your salary in order to meet your living expenses. In short, it is impossible to determine what portion of the overhead can be reduced unless you have an accurate cost statement before you which indicates the parts that may be reduced without danger to the life of your business.

The Reduction of Indirect Costs.

When business is dull it will be found that the unit costs increase to amazing proportions. This is due to the fact mentioned above, that, while labor and material may be reduced, overhead has to go on with little or no reduction.

To meet this overhead charge becomes a very difficult matter. If the volume of your business has shrunk and you try to add overhead to the present volume, the price is sure to go up to a point that will limit the number of orders you can get, even beyond the reduction brought about by outside conditions. In times of depression, your expenses increase out of proportion to your earnings. But that is the worst time possible to try to make your customers pay your additional expenses. However, this unearned overhead has to be cared for in some way and the solution to the problem is offered by the cost statement.

How to Treat the Unearned Overhead.

Monthly cost statements, properly drawn up, based on a thoroughly accurate cost system, will enable you to determine the normal rate of overhead for your business. This normal rate should be based on years of experience and not on your last month's business. When business is prosperous and you can charge a higher rate of overhead, your overhead drops; and when business is bad and you cannot get work unless you reduce your price your overhead increases. The only way that you can safeguard yourself in this respect is to develop a normal rate of overhead that will remain the same for good business or bad. When times are good you can build up a reserve against the bad times.

The Business Cycle.

The cost statement also acts as a barometer for your business. It is a well known fact that a period of business depression is preceded by a period of over-expansion until prices mount to a figure the public is no longer willing to pay.

Well-kept cost records, spreading over a number of years and faithfully reported by cost statements, will indicate when costs are rising to a point where it becomes dangerous to have a large inventory on hand. Then it becomes possible for you to set your house in order for the coming storm. Your cost statement will indicate the necessary retrenchment which you will be in a position to make before the storm hits you.

Cost Statements a Safeguard in Prosperous Times.

In prosperous times a cost statement offers a safeguard against extravagance. That is when one is apt to become careless. There are few of us indeed who have not been through a period of business depression that comes to this country once every so often. Yet when prices rise and the volume of business increases beyond normal proportions, we feel that it will always be so and allow ourselves extravagant expenditures that we would never have countenanced in normal times or during depression. It is during good times that we should save money to tide us over the periods of depression. We can do this in a business only by watching the cost statement very carefully and seeing that nothing is spent unless it is necessary for the maintenance and operation of the factory.

System Permits Maximum Use of Equipment.

The cost system makes possible the use of the plant to the maximum capacity. Suppose that a rush of orders for brick comes your way. It will be very hard to determine intelligently whether or not the plant can turn out the orders within the required time unless proper records are kept to show the capacity of the plant under the most extraordinary conditions.

Suppose you have reached the limit of your equipment capacity and you are faced with the problem of either adding to your equipment or refusing all additional orders. If you have cost records you will be able to tell whether, in view of your past experiences, you are safe in adding equipment to the plant so that your normal expansion will absorb it and you will not put too great a burden on yourself in dull times. If you have no such statement you will be unable to say whether you are in a position to add new equipment or not and you may load yourself down with additional equipment that will remain idle and eat up what profits you make. The cost statement will also indicate to you the number of helpers you are justified in adding to your payroll as the demand for work increases.

Elements of Cost.

We have described the use to which a cost statement may be put. Let us now examine some of the items that appear upon it. First, there is the material cost. This includes all material purchased in any form that is used in production. Second, there is labor cost. This includes all wages paid to labor for productive work. Third, and last, is overhead or indirect expense.

The Place of Overhead in Costs.

It is here that we must establish once and for all the place of overhead in costs. Cost, by our definition, is the sum of all expenditures incidental to production. Overhead is the indirect expense and is just as much a part of the cost as labor or material.

In order to illustrate this point clearly let us follow an order through from its acceptance to the time the work is completed. In order to obtain an order it is necessary to send out salesmen who work either on a salary or on commission. In either case, this cost must be charged to indirect expense. It takes just as much effort to talk to a man who finally refuses to buy as it does to one who places an order.

After the order is received the bookkeeper must record it and the cost of his time together with the stationery used must come under indirect expense. The light, heat, telephone, executive salaries, etc., must all come out of the indirect expense charged to the various jobs.

The clay used in producing any lot of bricks must be charged to that lot by a production order. In addition to the clay used it may also be necessary to use indirect material. By that is meant material that cannot be charged directly to the order.

Another illustration of where material would be treated as indirect expense is when the material is used for repairs or replacement or additions to the plant itself—as for example, in the case of a clayworker who wishes to enlarge his business and finds it necessary to lay more kiln floors.

This is neither repairs, nor replacement, nor material used indirectly for a job. It is an addition to the assets and must be treated as such. The cost of the bricks in this case would be charged to equipment. Material, then, may be used directly, indirectly, as supplies for temporary repairs, or as material

for permanent additions or alterations to the buildings and equipment.

Direct Labor.

The clay must be transformed into brick before it can be used. This transformation is brought about by labor. The wages of labor, therefore, are a very important element of cost and must be carefully recorded. Labor like material falls into several classifications. The time of a mechanic who works on a brick machine must be charged to the lots that go through. This is known as direct labor. The time of the helper who picks up the bats or cleans up, cannot be charged directly and therefore becomes indirect labor.

The driver who delivers clay to the disintegrator and the foreman who supervises the work of the mechanics do work that is indispensable to operation. The driver may have two or three carloads of clay behind his tractor at the same time and the foreman may be supervising the work of ten or twelve men at once. In neither case can the time be charged directly to one order. Therefore, it has to be treated as indirect expense.

The phrase, indirect expense, is used advisedly in this connection. It is customary to call indirect labor non-productive labor. This creates the impression that men who are doing this work are doing non-essential and unimportant work, since their's is non-productive as compared with productive labor. This casts an undeserved reflection upon the character of their work. A much more accurate designation for this class of work is indirect labor. These men make a very important although indirect contribution to the successful completion of any order.

The time of regular mechanics used in repairing or replacing any part of the machinery and equipment also has to be charged to indirect expense. The time of regular mechanics used in adding to the building or equipment in any way would have to be charged to the asset account.

The Importance of Overhead.

Although the nature of clay work makes the brick the basis of all cost calculations, nothing is more important in figuring costs than overhead. Overhead is directly and indirectly the source of most of the troubles in cost keeping. The quantity of clay used in a brick is fixed by the specifications. The quantity of labor necessary is more or less easily determined, if not before, certainly immediately after, the work is completed. But it is overhead that remains the elusive element of cost. How to apply overhead, what to include in it, what to leave out, where to place it, is one of the most troublesome problems. Nor are clay men alone troubled by overhead. There is no industrial field that does not have this difficulty.

Men are at a loss as to what to do with overhead and how to classify it. A proof of this is the many names by which overhead is known in different fields and in different countries. One hears overhead spoken of as burden, load, on-cost, indirect expense, etc. Of all these names, indirect expense is the proper one to use since it signifies best the nature of overhead. Such names as overhead and burden give this portion of the cost an illegitimate aspect. From the way some manufacturers treat overhead in their estimates one would think it had no right to exist. It is not an expense that may be incurred or not, as one wishes. Overhead is largely fixed. A man is much safer in figuring a little low on his labor and in shaving his clay costs a bit than in trying to allow less for his overhead charges than his experiences have shown necessary. It is always possible to speed up labor a bit, to figure closer so as to waste less clay in order to meet the competition. But you cannot reduce the foreman's wages at will or cut down the telephone bill, or avoid paying last year's taxes and this year's insurance.

Components of Overhead.

Above everything else, then, the owner must see that his price includes the proper percentage of overhead. Even a casual examination of the items that go to make up overhead will reveal the fact that the total charges are too considerable to be ignored at any time. For example, there is the salary of the foreman. Unless the owner supervises his own work it is absolutely necessary for him to have a foreman. The time that he spends supervising the work must be treated as indirect expense as it would be almost impossible to deter-

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37th Annual Banquet
National Brick Manufacturers Assn of the U. S. & C.
Hotel Winton, Feb. 1-8, 1923
Cleveland Ohio.

Banquet at the Thirty-Seventh Annual Convention of the N. B. M. A., Rainbow Room, Hotel Winton, Cleveland, Ohio, February 8, 1923.

Photo taken before all of the guests had arrived.

OFFICIAL PROCEEDINGS.



Annual Banquet of N. B. M. A. Held February 9th, Hotel Winton, Cleveland, a Splendid Treat.

A MOST DELIGHTFUL and Memorable Occasion," seemed to express the unanimous opinion of all who gathered about the festal board Thursday evening in the beautiful Rainbow Room of the Winton Hotel. It was a charming picture which gladdened the eyes of the happy throng. An excellent orchestra played a lively march which keyed the participants to a high pitch of appreciation, which never lagged, though the proceedings continued until a late hour. A fine dinner was served in faultless style and between courses popular though classy music added immensely to the evening's enjoyment, the vocal numbers being particularly fine. The real feast came with the introduction of Toastmaster Gates, who in his own droll way, made merry with the toasters. It was indeed a memorable and a joyful occasion.

Secretary Randall: Ladies and gentlemen, it is again my pleasure to announce the preliminaries. A year ago when I called our banquet to order, I told you I was the happiest man in America, and gave you some of my reasons. I am happy again this evening for several reasons, chief among them being the fact that I have here on either side of me two of the dearest friends I have in the world. I wanted to be Toastmaster tonight for it would afford me a rare chance to get even with Ed Orton for some of the many things he has done to me. As usual, I must give way for four reasons, and they are all visible here at the head table. First, ex-President Tom Wilson; second, Treasurer John Sibley; third, our newly-elected president, Rufus Burton, and fourth and chiefly, Will Gates. But even so, I am bound to say a word or two, for I have it in for Ed Orton.

Away back thirty odd years ago when I was young in the trade journal game, I visited a brick plant near Columbus and found the yard superintendent on the job. He was a big brawny chap. I explained my mission and asked some questions in regard to the plant. He answered me politely, but did not seem to be very much interested in me or my mission. I left feeling there was a man who was a good superintendent but cared very little about visitors.

A few years after that, at one of our National conventions, there appeared a professor from the Ohio State University, and blame me if it wasn't that same brickyard superintendent, Edward Orton, Jr. He made a great hit with me then, as he did with all those present. I know a good thing when I see it, and I grappled on to Ed Orton with a grip he could not shake and for more than twenty-five years after that he and I worked together with never a hitch nor a single element of discord between us. He as secretary of the American Ceramic Society, the first offspring of the N. B. M. A., and I as your "goat." Never in all this long term of years has he failed to respond to any request I have made in the name of the Association, and he is here tonight at much inconvenience to himself in response to my urgent personal invitation.

Some twelve years ago I met Ed by chance in New York City, and in answer to my question, "What are you doing here?" he replied, "I have made application for admission to the military training camp at Plattsburg, N. Y. The response was not as prompt as I desired; so I have come after it." That's Ed's way and he got what he wanted. He urged me to join him, saying, "It will do you good and take some of that paunch off of you." (Laughter).

He took the course, came through with honors, but I had to go back to my desk, and so lost a chance to be a hero. He got in the war game and came out a Colonel. You see he has topped me all along the line, and I wanted to be toastmaster just to get at him. There are a lot of things I could tell that the rest of you don't know about him, and I want to, but here is Will Gates who has come all the way from Chicago for the same purpose, so I must take a back seat. Before doing so, it is my privilege to introduce to you our newly-elected president, R. C. Burton of Zanesville, Ohio, for an official word of welcome. (Applause).

President Burton: Ladies and gentlemen, members of the National Brick Manufacturers' Association, I am glad our Secretary has discussed some of these things which have been worrying him. I am at a loss to know why I was selected to be president of this organization. I have been trying to be president of this Association for thirty-seven years. I have seen blacksmiths and all sorts of tradesmen drift into the brick business and become president, and all this time I had been trying to get to the top. Now, there is something doing, and I do not know what it is.

Some time ago a school teacher said to her scholars. "To-morrow morning I am going to ask you a question, and I want you all prepared to answer it, 'What shape is the world?' Don't answer now, but tell me in the morning."

When morning came, she called out, "Now, William, what shape is the earth?" He said, "Round."

"George, what shape is the earth?"

"Flat."

"Phillip, what is the shape of the earth?"

"Square."

A little fellow in the back of the room held up his hand, and finally the teacher said:

"Well, Sammy, what do you say the shape of the earth is?"

"I asked my dad about it last night, and he didn't want to answer, and I asked him again, and he said, 'In a hell of a shape.'" (Laughter).

I do not know yet just what shape this organization is in. It will be discussed later on I hope. I am not going to make a speech, but I wanted to say that I appreciate this honor for which I have waited so long. Though it has come so late in life it has rather taken the conceit out of me, so many things have happened that has a bearing on that line. I remember an experience Joe Jefferson, Jr., had. He knew his father was getting old, he had a great deal of respect for his father and often wanted to relieve him in the part he had played so long, the famous Rip Van Winkle. He knew his father was failing rapidly and he hated to hurt his feelings by telling him he ought to give up. The play kept him alive and kept him active. Down at Canton one evening he said to his father:

"Father, Canton is not a very large place, you had better let me take your part. We are coming to Cleveland, and you know you will want to go on at Cleveland, so you had better let me take your place here and you rest up for Cleveland."

He finally persuaded his father to let him take the part and play Rip Van Winkle. The old man reluctantly gave in on account of it being a small place, so young Joe played Rip Van Winkle, and the next morning he was very anxious to see the morning papers, because he knew he had played the

part well, and had had a very appreciative audience. So he hurried down to get the morning papers and see the criticism. At the cigar stand a couple of young men were talking, and one said:

"Did you go to see Rip Van Winkle last night?"

Yes," the other said, "I was there, and I tell you the old man is failing fast." (Laughter).

So, I am glad this honor has come to me while I am still able to play my part, before I have failed too much. Now it gives me the greatest pleasure to bid you welcome to our feast and introduce one of the best clayworkers or clay manipulators in the United States, one who really does not need an introduction, Mr. William D. Gates of Chicago, Toastmaster. (Prolonged applause).

TOASTMASTER GATES' INTRODUCTORY.

Toastmaster Gates: Ladies and gentlemen, this thing is getting to be pretty serious. They promise a man he can be toastmaster and then they go to work and make a lot of speeches and Randall makes a speech and introduces your president who tells you entertainingly about young Jefferson trying to take it away from old Rip, and I am introduced here as an antique as another Rip—it is all right with me, but I did not know the information was so general. I have been wearing a little button here which I claim represents the most exclusive fraternity in the world, the Ancient Order of Dead Ones. It is a little piece of glazed Egyptian work properly mounted, and it was once worn by another mummy. They are just digging up in Egypt now another one of this organization. He knew he was dead, stayed buried and I am the only walking delegate.

Secretary Randall here took occasion to talk about his shape and appearance. I have had experiences in that line also. It has been a great study with me as to just how I would shine, whether mentally or physically. I had an idea there was a certain quiet dignity about me that people would see and give me my proper position. Quite a number of years ago, the family was in the South, out in the piney woods, and I got a letter from them saying, "Send down a white waiter's jacket"—not a white waiter, but a white jacket for a colored waiter. I went around to one of our emporiums in Chicago, and made my inquiry until I got the proper place, and looking over the counter to the man in charge, I said, "I want a white waiter's jacket." He took one look at me, and run his eye around me, and then reached for the drawer. I then told him the size I wanted, which happened to be quite small, when he looked at me again and said, "Oh, you don't want it for yourself." (Laughter).

There are a number of these things that puzzle a man. A great many years ago the Supreme Court of Illinois issued a certificate that I was a lawyer—of course, the courts do make rank decisions sometimes—nobody seemed to coincide with them and it was for quite a while my exclusive information. I had intervals when I thought I was a lawyer, and the sometimes I doubted it, and then sometimes I knew I was not. I found the solution. Sometime ago I went into New Mexico and among the prehistoric ruins there. There was a retired judge and his wife living in the canyon who took care of the people who came down there, and I spent ten days down there most enjoyably. When I finally came out and got ready to shift the suit I had worn, and put on my other clothes, I found that suit of clothes of mine exactly fitted a retired judge, and therefore the Supreme Court was right as to the anatomy of the case—I was shaped like a real judge.

Mr. Randall was insistent that I observe the proper forms in coming up here and donning my glad apparel—I never feel just exactly right in it, you know, but when I took it out of the moth balls and put it on—I only put on the dinner coat, I did not don the long tails, because I have had several occasions on which the guests insisted upon giving me their orders and quarreling with me because I did not give them proper service.

Randall has told you about everything, and told you about things which happened thirty-seven years ago—I am proud to say I was a charter member of this association. I remember distinctly the first meeting we had, and a young man who came in and was elected secretary—a young man strong in gall, but lacking in experience, but he has gathered more experience since then,—I have sometimes thought he needed an operation on the gall. (Laughter). One of our dear old friends who has passed over—so many have gone over on the other side of the dark river—some of our treasures—so many of our recollections are so vivid, and we miss these old friends so much. I remember hearing this old friend speak, as I am

trying to speak tonight, and seeing you ladies here bringing your bright eyes and cheering us and helping us, for it is not possible for man alone to do this business, not by a long shot. This old-timer was speaking to the ladies, as few can speak publicly, or even privately; he described that incident in the Bible in which the first woman made her appearance. He told them how Adam was cast into a deep sleep, the first mention of an anaesthetic, and the Lord took a rib and made Eve, and how Adam needed Eve, how lonesome he had been, and how glad he was to see Eve, and then, looking intently at the ladies the old gentleman said, "The Bible does not say from which side he took that rib, but I know it was the left and close to the heart, and had a little of the meat with it. I know he did not take it from the right side, because that is the gall side, and there is no gall missing." (Laughter).

I had to go through an operation up at Mayo's recently, and I said I absolutely would not take ether. I said, "You might go to work and fool with my gall, and I have to have it in my business."

Another thing Randall has done. I would not do this, but you know they can't load this onto me. In the first place, he puts these nice little touches to the program; he gives



Toastmaster W. D. Gates, Chicago, Ill.

Mr. Burton the "Introductory?" "Tis sweet to know there's an eye will mark our coming, and look brighter when we come." Nice and pretty and sweet, you know. Then he says for me, "A horse, a horse, my kingdom for a horse." That is a nice way to treat a man whom you have known for thirty-seven years. Thirty-seven years, just think of it! I almost hated to mention that too, because it seems almost criminal on the part of my parents to have allowed me away alone at that time of my life. He has given me the subject of "Hobbies." Giving such a subject is the deed of a rash man. Any man knows that to start a man talking of his hobbies is absolutely hazardous. You know the finest definition of a hobby I ever heard. It is an old story—of course, if I told you any stories at all they are going to be old. There are no new stories. We may take them out and dust them off and use them, and then put them away for the next dinner. Once there was a man who was going through an insane asylum. (This is not personal, I never went through an insane asylum, I have always been afraid I would never get out). They told this visitor to humor the inmates in their fancies. Finally he found a man sitting astride a table, with a chair in front of him, and a couple of strings fastened to the chair, and it

was quite evident he thought he was riding a horse. The visitor said to him:

"That's a fine horse you have there."

The man looked at him with disgust and answered, "That isn't horse."

The visitor said, "If it isn't a horse, what is it?"

"No, it's a hobby," answered the rider.

"Well, is there any difference between a horse and a hobby?"

Again the man looked his disgust. "I should say there is. You can get off of a horse." (Laughter).

It is absolutely dangerous to ask a man to talk on a hobby, and a clayworker of all others. Because clayworkers are enthused with their work. They are firmly impressed with the thought that it is their privilege to make something beautiful and lasting. They are the most enthusiastic people I ever saw. They would not be in the business, if it were not for their enthusiasm. They talk and think of nothing else.

They have imagination. I was talking to a man the other day on that subject. He was very much wrapped up in the subject of imagination and told of the power imagination has. He said Lincoln had imagination, and Caesar, and Augustus. He named any number of men. He said, "Ford has a wonderful imagination, and he not only has imagination; he has the power to impart that imagination and make thousands of people imagine they have a real car." (Laughter).

The clayworker goes on his way confident in what he can accomplish, enthusiastic, trying to make something everlasting that will go down to posterity. I have here quite a wonderful little thing. I got it from a man who got it at Babylon. It is one of those little tablets they made at that time. You know at that time everything was inscribed on clay, and these were piled up and they made their libraries; most of them in unburned clay, but some of them in burned clay. They differed widely. All clay as we know is not the same, hence some clay was more suitable than others.

There is nothing that differs more than the different varieties of clay. Sometimes the man getting the clay made rather a poor selection, and the uniform impression was not distinct. This man was fortunate, or he had judgment, he selected a good clay, suitable to take shape and taking hold its message for all time; it is history and read by a man skilled in that sort of thing, and these inscriptions are as easy for the scientist to read as ordinary handwriting to the ordinary individual, probably much plainer than mine. This old-timer wanted to make his tablet everlasting, and he did, for the man who burned that clay and the man who inscribed upon it, have been dust for over four thousand years, and that little piece of clay is just as good today as it was when it left the hand that formed it. The museums of the world today hold among their greatest treasures the work that Della Robbia made in Italy four hundred and fifty years ago. Della Robbia was a man making statuary in marble. All of his work had first to be modeled in clay and then translated into, copied into, the harder material, but the original of all of his work was in clay. In getting this clay, he evidently went to the potters, and saw what they were doing there. They were making some enamels rather of an ordinary character, and he conceived the idea of using these and did use them, and the result is the work was given his personal touch, and his dreams and inspirations were translated in it and are treasured today in the best museums of the world. So it is with clayworkers, they are working into the clay their dreams and inspirations. Whether it is common brick, or face brick, or whatever it may be, the clayworkers today are putting the best there is in them into their output.

This very tableware which we have here. Do you ever think how much we use clay, how we eat off it? It is the busy housewife who gets them out and cleans them and puts them away again three times a day, a thousand times in a year, thirty or forty thousand times in her lifetime, and the only way she contributes to the real clayworker is in occasionally dropping a dish and breaking it.

There is another thing about this which interests me exceedingly in the old story business that proves that one story at least is old. You may have heard the story of the Irishman who was brought up before a justice of peace in a little town, and the justice tried him and found him guilty and fined him. The Irishman, after paying the fine, hung around the justice for a while, and the justice said:

"That's all right, Mike, I got through with you."

"That's all right, your honor," said Mike, "I want a receipt for the money I paid."

"You don't need a receipt, Mike," said the justice. "It is marked down here in the book that you have paid."

"But I want a receipt. Sometime I will die, and I will go up to Saint Peter, and he will say to me, 'What kind of a life did you live?' I will say, 'Fine,' and he will say, 'Did you pay your bills?' I will tell him I did, and he will say, 'Did you pay that fine in that little old justice court?' I will tell him I did, and he will say, 'Show me your receipt,' and then I will have to go and hunt all over hell for your honor." (Laughter).

This man who made this clay tablet evidently knew that story. This is a receipt, and he had his receipt burned on clay, so it could go all over hell.

They told me the toastmaster mainly had to look the part. It was not up to him to do anything else, the real talking was to be done by someone else. They rather misrepresented it to me, because they took away the first inning of my performance. I think the next thing that is scheduled here is music. I do not know how we are going to get it, but I will refer it to Randall. (Laughter and applause).

Secretary Randall: I am not going to sing, I can tell you that. I think our song birds have flown, and if Will Gates don't get up and introduce the next speaker, I will do it myself. (Laughter).

Toastmaster Gates: I am not going to take any more chances with Secretary Randall. I like these little selections he has on the toast list. I don't know who gave them to him. They do not look to me like his offspring. "Be not a glow worm, whose fire is unavailing." He might have added: "Be not a lightning bug that flies in the night and carries his headlight on behind."

I rather hesitate in introducing the minister. I was brought up in the country, and our house was a sort of a minister's hotel. I never have gotten so I could retain my composure in their presence. You know I told you about my physical shape. I had another experience. I was taken for a minister once. Many years ago down just as close to the Gulf as I could get, in Alabama it was. There never had been a bicycle in that county until I took one in, and I never did excite so much comment as I did there. When I used to go along one of those roads and meet a piney woods pony he would climb a tree. On one of these expeditions, I had a companion with me, and we came suddenly out of the woods into a little clearing. There was a little cabin in the midst of the clearing and there were some chickens about the dooryard, and they all immediately ran under the house. The man with me laughed and said, "Every chicken there ran and hid under the house, Gates. They thought you were a preacher." Well, it is something even to fool a chicken. I have heard so much about the speaker who is to follow that I hesitate to say anything. It has been suggested to me that we have his name wrong, that it should be an M instead of a B, making it Mustard, so spicy is he, but I am not going to fool with him at all. I saw a pair of gloves up in the secretary's office, the kind they handle brick with; I meant to get them on to handle this job, but I did not have time to get them. I am going to call on the Reverend W. W. Bustard of Cleveland, to speak on "The Light That Fails," or anything else he pleases. (Applause).

THE LIGHT THAT FAILS.

"Be not a glow worm whose fire is unavailing."

Rev. W. W. Bustard, Cleveland, Ohio.

Mr. Toastmaster, Honored Guest, Ladies and Gentlemen:

I want to assure you it is a great pleasure for me to be with you tonight on the occasion of your annual banquet. I have enjoyed it exceedingly. I know our Toastmaster has made a few mistakes. He never was taken for a minister—he may have been mistaken for one. (Laughter.) I am going to accept him though after his years of experience as an authority on chickens—I refuse to say here publicly what kind of chickens. (Laughter). I feel on this occasion a good deal like the Chicago girl who put her foot in her shoe in the morning and said, "This is a big thing and I am glad I am in it." For I want you folks to know that ministers do appreciate occasions of this kind, they help to cut down for us the present high cost of living. We have the habit, just as you have, of eating.

Speaking of habit made me think of a story I heard the other day, where a stranger met a man on the street here, and said:

"Mister, do you happen to have a match?"

The stranger said, "Yes," and handed him a match.

"Say, just by the way, you don't happen to have a little piece of cigarette paper with you, so I can roll one?"

"Yes, I have."

"By the way, stranger, have you any tobacco with you?"

"Yes, I have some tobacco," and gave him that.

And a little newsboy standing by looked up into the man's face and said, "Say, mister, you ain't got nothin' but the habit, have you?"

I sometimes think these occasions in a way get to be a habit with us, but I have never reached the place in my ministerial experience that I failed to indulge the habit, and I assure you I have thoroughly enjoyed this happy occasion we have had together this evening. I did not know what my topic was until a little while ago. Of course I do not know much about it now, but that never makes much difference with a minister; if we ministers had to talk about a subject on which we actually knew a great deal, we would stop preaching.

There is not a minister in this country who cannot talk on capital and labor, and yet what does a minister know about capital—he never had any! What does he know about labor—he never does any! But he can talk on it. As far as this subject is concerned, I thought I would not be a stranger to my subject, for I asked David Olmsted, who runs this hotel, where he thought they got this topic, and he said, "I have had a lot of experience in the hotel with banquets, the subject makes no difference to the speakers, so go ahead."

I thought I would talk to you a little while upon "Some of the characteristics which make for real success in life." It has been my pleasure to know some really successful men, and to study a little of their characteristics, something of the secret, if there is any such thing, that has made for the great success of their lives in their work. I would like to discuss that as a practical subject for a few moments.

The very first thing I want to mention is this—the power of concentration as opposed to the force of dissipation. Do you know that science is always working on this problem, how to use more and lose less of the power it has produced. Nobody can find fault with the power science produces. Science has produced more power in the last fifty years than was produced in the previous 5,000 years. Science has gone into every realm in the universe, and every time has come back with a new force that has been an added blessing to mankind. Science went into the clouds and found lightning; into the air and found ether; into the ground and found gold and silver.

(I think you folks don't go back into history when you only go back to Egypt and Babylon. God was the first worker in clay. He made Adam and Eve out of clay.)

There can be no fault found in the amount of power that science can produce, but science loses almost as much power as she uses. An expert will tell you, for instance, that 50% of the heat from the coal goes up the chimney. I declare to you last Sunday when it was just four degrees below zero, 102 per cent of the heat from my coal went up the chimney. Forty per cent of the steam from the boiler never turns a wheel. They will tell you nearly fifty per cent of electricity is wasted in the air, a force absolutely dissipated instead of being turned to some useful purpose.

When you were a boy, you used to do a trick like this: You took a piece of glass and put it between your hand and the sun, and brought it to a focus and burned your skin, and when you took the glass away, it browned it. Now the difference between dissipated sunlight and concentrated sunlight is the difference between burned and brown skin. I understand there is enough energy in forty acres of sunshine to run all the machinery in the world. If it can ever be harnessed and made a concentrated power, we might be able to do away with the other kinds of force.

This is an age of specialists. It is an age when a man must learn to do one thing well, no matter what it is. Better do one thing well and stop doing all things poorly. You men have stayed with one trade until you have made a success of that one thing. No man ever reaches success in life until he gets to a place where he can do some one thing better than he can do any other thing. The old Greeks had a saying that "A man with one idea was terrible." They meant he had a force in the possession of one idea which moulded his life and inspired his movements.

I remember reading a little ad which came out in a sporting paper at one time which had to do with hunters. I was born in a family of hunters. I lived in my father's backyard with the other dogs. The only difference was they were pointers and I was a setter. As I grew up into boyhood, I was a large boy and rather strong and my father and brothers used to

take me out to hunt with them. We lived near some pretty good hunting, were just brought up on rabbits and quail, and partridge and woodchucks. The other two dogs and myself had our parts to perform. Every time we went hunting they would "point" the game, and my father and brothers would come up and shoot into a covey of quail and it was my duty to leave the other two dogs and follow the quail and sometimes they would go around a corner or over the hill. The other dogs would retrieve the birds which my father and brothers had shot. At fifteen I said: "Look here, father, I ought to have a gun, too," and he let me have it. When they missed a bird, they used to say something like this, "Well, the shot scattered." Nothing was afraid of me when I shot. The rabbits used to sit there and laugh at me and wiggle their ears. I used to say, "The shot scattered." My father said, "Look here son, if you will aim your gun straight, and pull the trigger at the right moment, you will hit something." This ad to which I referred read something like this:

"Hunters, we will send you a secret as to how you can keep your shot from scattering, if you will send us fifty cents."

The money poured in, and this was the answer they sent: "Put one shot in at a time, and it won't scatter."

If a man don't know that, it is worth fifty cents. It is worth five dollars, it is worth five thousand dollars for a man to know that he can learn to do one thing better than anybody else, and then he will be a success.

I have noticed also one thing about men who make a success of life, they have will power. Did you ever know a man who made a great success who did not have great will? Caesar, Napoleon, Washington, Lincoln, Grant, Woodrow Wilson, and that uncrowned king among the royalty of the world, Theodore Roosevelt. (Applause.)

One time Mark Twain was going to give a lecture in a city in New York State. He got caught in one of those Central New York blizzards. It snows and blows and snows and blows up in the central part of New York State worse than any place you ever saw. Mark Twain wanted to reach that city, for he wanted the \$100 he was to get for the lecture. That's the only difference between Mark Twain and me tonight, and what is \$100 between friends. Mark Twain went to the conductor, and said, "I have a lecture which means \$100 to me," and the conductor said, "I don't think we will get through." Then he went to the engineer, and said, "What is the chance of getting through. It means \$100 to me?" The engineer said, "I don't think we can get through at all." Then Mark Twain saw a flicker of a little light and he thought that might be a depot, so he waded through to the depot and sent a telegram to the chairman of the meeting, which said, "I have every motive with which to come to you except a locomotive." (Laughter.)

You know your average young American today has every motive of success except a locomotive of will power with which to succeed. Will power is a motive which drives a man to the achievement of his life.

When General Grant was trying to take the doomed city of Richmond, he had to fight the battle of the Wilderness. He had given but one order, "Forward by the left flank and on to Richmond." At the end of the first day's fighting the slaughter had been terrific. At the end of the second day so many had been killed that a cry went up from the north, and word was sent to Lincoln, asking Grant to withdraw. At the end of the fourth day, an actual demand went to Lincoln to command Grant to leave the field. The pale moon looked down on the fourth night on the dead of the North and the South. At twelve o'clock Grant called the generals into his tent and said, "What do you think we ought to do?" One of them said, "There is only one thing we can do. This slaughter must stop, and under the cover of darkness you can take your forces off the field." Grant said, "Gentlemen, you are nervous, you have had a hard day, and you had better retire now." Grant immediately laid down and went to sleep. Early the next morning he was up, back went the little flap of his tent, and the order of the day was, "Forward by the left flank, and on to Richmond." The men threw their caps high in the air, their swords and bayonets gleaming in the rising sun light. And that day Grant threw his army against their army and through that day he fought the battle that won the war that saved the Union, and made possible "One flag and a Nation indivisible." (Applause.) It was simply the will of the man who would do or die.

Emerson was right when he said "Every great triumph in life was a triumph of enthusiasm." Enthusiasm has cut down forests and built up our cities. Enthusiasm has crossed our rivers and tunneled our mountains. Enthusiasm has snatched the lightning from the skies and took the coal from

the ground. Enthusiasm has turned the ocean into a whispering gallery for all the nations of the earth, and made the waves the messengers of man unto the very ends of the earth.

Where there is a will, there is a way because the will will make the way!

I find another characteristic on which I will touch just a moment. It is a little different from what men emphasize today. I want to speak of it as individuality. I do not mean a peculiarity which separates a man from his kind so that they call him a crank or a fanatic. I mean a man should be himself as God intended he should. You know the temptation today is toward uniformity. To look like other people; dress like other people; talk like other people; and live like other people. I sometimes cry out, "Oh, God, where is the individuality with which you tried to have every man born."

Out on Euclid Avenue one day I saw a little sign which was not advertising anything in particular, but on a board in connection with some work. It said, "No two leaves are alike." I stopped to read it and I said to a business man, "Look at that." He said, "What of it?" I said to him, "What of it! No two leaves alike. Don't you know it means God is so great he can make everything there is in this world and not make any two things alike; no two blades of grass alike;

viduality. Uniformity rules the world. Don't you men remember when fashion set up the tight trousers and we put them on? You remember those trousers, don't you? You looked just like a clothes pin when you put them on. When you put them on, you could not walk, and it took the whole family to get them on. Then someone in power said we were not using enough cloth to make these trousers, and we must wear loose trousers, and we put them on, and when we got over on the northeast side of the street and the wind was blowing twenty miles an hour, you would look like a balloon. But fashion said "do it," and we did it. I think the time will come back when men will live their own lives, and yet co-operate with other men.

Another element in life's success is character. I am glad J. Pierpont Morgan lived long enough to go before that investigating committee that asked him what the basis of business in America was, and Mr. Morgan said, "The basis of business is character." The committee said, "Pardon us, but we have understood the basis of business is credit." "You are right in one way and wrong in another way," Mr. Morgan replied, "the basis of all credit is character. I have had men who would come in who had character and did not have a cent in the world, and wanted to borrow a million dollars, and I loaned it to them. Gentlemen, you are wrong, the basis of business is not credit, it is character." That is the great thing which will win every time, for written on the threshold of every trade and every occupation, and over the door of every profession are these words:

Wanted, Men
Not systems fit and wise
Not faith with rigid eyes,
Not wealth in mountains piled,
Not power with gracious smiles,
Not even the potent pen,
Wanted, Men.

(Continued applause.)

Toastmaster Gates: I am satisfied my hunch was right. I needed those gloves. You noticed one thing, he did not scatter his shots when he shot at me. (Laughter). Now there is a question to argue here, but I don't want to argue with him. There is a point there about the hen. The hen may not be able to perceive the intelligence in a man, but the hen judges from physical characteristics, and I still insist I looked like a preacher to those hens—you can't fool a country hen on appearance.

Dr. Bustard spoke to you about these fashions which come from Paris. I was brought up in a country district where we did not get our fashions from Paris, but we got them from mother's own hand, manufactured in the house. In the days of my joyful boyhood my mother used to make me a pair of linen trousers that had real creases in them but she pressed them flat. When I put on those trousers, I was considerable of an object, seen from front or rear, and when I came to a gate, not a wagon gate, I side stepped it to get through. There was another complication that set in. When the front part of these trousers became worn out—my progress was usually forward—I was brought up in a time when a boy was supposed to be useful rather than ornamental—and those trousers became worn, especially in the front or knee portions, they became form-fitting, to an extent, and I remember my mother sawed off the legs of those trousers which became worn off at the knees, transposing the front to the back, and I had difficulty to find whether I was going or coming.

Things have changed in the life of this organization, there was a time when there had been the utmost secrecy in the potter's art, when any man who achieved success hid the secret, and very often the secret died with him, but that was all changed when Ed Orton gathered there that little band of twenty-two, without financial resources, in what appeared to be a hopeless effort, to that first convention which resulted in a little book with eight papers in it, highly scientific, each man giving to the public the result of his experience, working for the good of the art, not for the individual. I remember I looked aghast at it. "We have done it now, but we can never do it again, for we have exhausted the subject," we said. But these publications went on growing in size, until now there is a five-foot shelf of absolute, scientific information, the most there is in the world in a scientific way on the handling of clay, and it has all come from that little band gathered there twenty-five years ago. And that band would never have been gathered except from the organized work of Ed Orton. We have watched him go on until he got a school started, and that school resulted in other schools, until these ceramic



Reverend W. W. Bustard, Cleveland, Ohio.

no two flowers alike; no two faces alike; no two people alike. We have a God so great he can fill this whole world with variety."

I am not talking against co-operation, for if I was going to take any more time I would speak of co-operation as an adjunct to individuality. This is the greatest word of the twentieth century. I believe we can do together what we cannot do alone. It always makes me think of a German story. This German was running for his first political office. It was the first speech he had ever made. "Friends and fellow citizens," he said, "I am not going to make a speech, I am going to say something. What have those Irish got over in the Third ward? Brick, brick pavements they have got." (Must have got them from you brick manufacturers.) "What have we Germans got over here in the Third ward. Mud! Mud, I say. Now, Germans and fellow citizens, let us put our heads together and make a block pavement." (Laughter.)

I do not know what you are making. I know you will make something if you get together. I know we can do some things together that we cannot do alone. But even together, and working together, a man should never lose his indi-

schools are scattered all over the country, such as we have in Ohio, in Illinois, New Jersey, Iowa and others. These states are covered with deposits of clay, and the surface has not yet been scratched. But these clays must have the human touch, they all require mixing in of brains. When Ed Orton started that school and that Ceramic Society he started educating men to mix clay with brains. If they cannot find a particular clay to suit their purpose, they mix clays until they get what they want, and mix in the brains. I have always said while the Germans always worshiped Seger, we have a greater Seger with us in Ed Orton. Before he was made a professor he was a geologist, and they tell me there is a mountain named after him, and it is an honor for the mountain. Then, when his country got into trouble, he dropped everything and went to the rescue, and we all honor him and the country he honored.

I find noted in the programme:

"I slept and dreamt that life was beauty,
I woke and found that life was duty."

I don't know where Mr. Randall got that, but he puts it here before the name of a man who has dreamed and who has done things. I go back in my recollections, I still have fragments of my memory, that is where I have it over the Egyptian they are digging out. I wonder how things will look to him. Of course, I don't think he will break in as a walking delegate, I don't want any other company in my association. I am the only walking mummy, you know there is and I want the honor for myself. But, to resume, I look back to the time when Orton as a young man came into our organization, and I look at the things which have been accomplished, and although he was a dreamer, he dreamed big things, and the things he accomplished have been far beyond anything we ever dreamed of at that time. With him and with others in this association there have been the choicest friendships of my life. The thing that brought me down here this evening—I tell you I have become more and more convinced there are two adages that are true, one of the most important perhaps is "There is no fool like an old fool," and the other is "The pitcher that goes too often to the well gets broken," and I have been dreading the inevitable result which must come sooner or later. As I said, the one thing that brought me here tonight was to be with Ed Orton—I knew him then as Ed Orton and think of him always now as Ed Orton—who all these years labored untiringly with ideals and trust in the future of the country and the future of the craft. There would be no American Ceramic Society today but for him, for gathering together there a little band of twenty-two enthusiasts; he infused his enthusiasm and led them and he has been an indefatigable worker always wherever he has been. I am not going to introduce Colonel Orton, or General Orton, or Dr. Orton, or Professor Orton, but the very best friend a man ever had, Ed Orton of Columbus, Ohio. (Prolonged applause).

THE MIGHT OF RIGHT.

"I slept and dreamed that life was Beauty
I woke and found that Life was Duty."

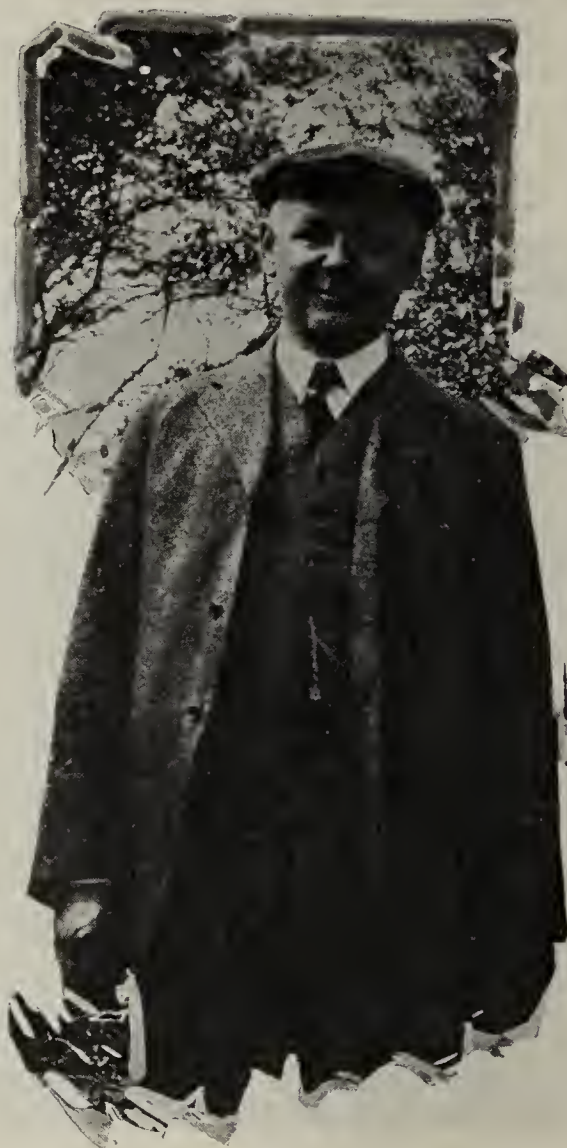
Colonel Edward Orton, Columbus, Ohio.

Mr. Toastmaster, and friends, I certainly thank you for this very courteous welcome. I hardly know whether to thank the Toastmaster for embarrassing and overpowering me with his introduction—but we are old friends! My trip up here has been eminently worth while just for the pleasure of hearing him preside.

I heard a Chinaman the other day tell the following story: He was visiting a friend in Boston and was taken to a fine restaurant where they were served a bountiful meal. In time they reached the dessert. It was something he had never seen, and perfectly delighted him. It was a confection consisting of two layers of cake with a delicious white creamy substance between. He liked it very much. He said to his host, "What is this dessert?" And his friend replied, "They call it Washington pie." So this Chinaman wrote this down in his little note book very methodically. In turn, he was entertaining some newly arrived Chinese friends, and took them to this same restaurant. When they reached the dessert stage, he said to them, "I will astonish you greatly. I will give you some of the most delicious dessert you have ever tasted," and then ordered Washington pie for everyone. When the pie came in, he was surprised. The substance between the layers of cake was of a very dark color, and did not taste like that he had before. So he called the head waiter, and

said, "I fear there has been a mistake made. I ordered four Washington pies." The waiter said, "That is what you have got." The Chinaman cogitated for a few minutes and returned to the charge and said, "There must be a mistake, I had some Washington pie, and it was not like this. It had a white substance between the layers." The waiter said, "That is Washington pie, the only difference is in the filling." The Chinaman looked at it a moment. "Oh, I understand, I had forgotten you have two Washingtons—George and Booker." (Laughter.) He said, "I wanted George."

Now, that Chinaman used his head! He had not quite all the facts in the case before him and consequently did not reach quite the proper conclusion, but if you will put yourself in his place, you will see how quickly and ingeniously he



Colonel Edward Orton, Columbus, Ohio.

reasoned out a plausible solution. You will have to admit that he was accustomed to thinking.

Now, the conspicuous weakness I feel in American life today is the unwillingness or inability of so large a section of the people to think. It is the worst thing possible for us to drift along, unwilling to be burdened with the responsibilities and cares of citizenship. America must think, or else she must be content to let other people think for her, and tell her what to do. The two things go together.

The supreme test of an individual is his ability to stand prosperity. Adversity is the common inheritance of all mankind. We are born into the world, we are guarded for a little time by parental love. Soon we begin our fight for an independent existence. Schooled by that grim trainer, Adversity, we live out our span, kept clean and fit by the struggle. Such is the story of the vast majority.

But if, by greater ability or strength or courage or chance, one of us prospers more than another and becomes rich, at that very moment his hazard is increased ten-fold. Few are they who triumph over the insidious attacks of prosperity.

Fat, lack of exercise, ease, sloth, indulgence and excess take their terrible toll.

As with individuals, so with Nations. A nation is only a collection of individuals. In many ways the National life is epitomized by the life of the individual. Certainly, we can say that the National character is the fused or composite character of the millions of our citizens. And the things which threaten them individually threaten them collectively. Hence the greatest danger to the nation, as well as to the individual, is prosperity.

America is on trial today in a way that few seem to realize. We were at first an isolated community, growing up by ourselves, and suspicious of all other nations, whose social order we hated and which we determined to avoid. We were taught for generations to avoid outside contact and to distrust foreign governments. We were taught to so hate militarism, that we have all our lives suffered because unwilling to impose upon ourselves the military forces necessary for our own adequate protection, and we have spent billions unnecessarily to avoid spending a few millions a year. We have developed world-consciousness very slowly, and still are a politically immature people.

At the beginning of the World War, we did not visualize our duty until almost too late. Another two months of delay would probably have seen our despairing Allies break down and let the Germans through to victory. Our President completely misread the character of the struggle; he saw the fight as between equally capable participants. He warned us to be neutral and prevented our making any military preparations in advance. Hence, when we went in, we went in totally unprepared. No need to discuss how we acquitted ourselves. You know that.

We emerged from the conflict with a land untouched, and keyed up the greatest productivity ever known. As to our capital, we had sixty per cent of the world's gold, and everybody was our debtor. As to prosperity, our labor was fully employed at the highest prices ever known and rolling in hitherto unknown luxuries.

And what of our losses? We only lost two to three per cent of what our Allies lost in man power. In property losses, we endured about fifty per cent of what our Allies had to endure. And, in offset, we have loans to Allies of about \$11,000,000,000, all more or less collectible. This money we loaned to them, to enable them to stand between ourselves and the Hun.

Have we prosperity? Yes, the greatest there is any where in the world. We waste enough to feed the world's starving. Broken food which has been carried out of this room by the waiters here tonight would feed five hundred starving children for several days. If we are not prosperous who is? I repeat, the greatest danger to any nation is prosperity. And we are in danger!

The dangers of prosperity are all the more difficult to meet because they are matters within the control of our own will power. Only moral courage is needed to convert them into blessings. I almost wish it were not so, for America is always so magnificent in the presence of tangible dangers. But in things not visible to the eye, things which require stiff personal control, strong sense of personal responsibility for what is done in government, we are at our worst in piping times of peace and prosperity.

What are the specific dangers which victory in the war has laid on our doorstep? They are both internal and external. Some of our internal responsibilities are the following: Our obligations to apply in peace times the outstanding lessons of the war;

(a) on the health of the people;

(b) on illiteracy and poor quality of our educational system;

(c) on military unpreparedness and the adoption of some system of military training;

(d) on the control of immigration. Can we stand the pressure of commercialism for more labor in boom times?;

(e) on the necessity of providing a rational basis on which the merchant marine can develop. President Harding is now calling for ship subsidy.

There are many others which might be cited. Any one of these subjects would readily provide for an evening's talk.

In dealing with these internal responsibilities, we would find little difficulty in agreeing in principle, on what to be done. We would find the cost would be the trouble. It would cost us roundly in increased taxes to adopt and enforce the needed reforms. It is perfectly possible for us to take the ground that while all of these reforms and improvements are good and

desirable, we, the present generation, frankly are not willing to tax ourselves any more heavily for the benefit of posterity. Such a decision, while regrettable, would not be either dishonest or unfair. It would be our own personal affair and nobody else's. It would be a measure of our idealism.

Now, let us look at our external affairs. Our policy of non-participation in World War adjustments is the crux of this situation. This matter is not one which is solely our own affair. It partakes of the nature of a bargain, although no formal pledge was extended, and it takes two to make or break a bargain. We assumed a share of the responsibility of the war and its involvements by our words and deeds, of which we cannot in honesty and fairness divest ourselves in any sudden or independent fashion.

We resisted all the appeals of the Entente Nations for aid for two years and eight months. Our President took the ground that the war was a quarrel between equally selfish and grasping powers, and that no moral principle was at stake, and enjoined strictest neutrality. He made his campaign on the slogan, "He kept us out of war." He still thought so in the fall of 1916 after his second election, when he called for a "peace without victory." He seemed to think that a drawn fight was the best end a war could have.

But the American people had been gradually but resistlessly changing their mind, even if the President had not. The whole world now knows how utterly wrong the President's viewpoint had been, and how thoroughly the American people discredited it, in the few months following this astonishing utterance. By going into the war we admitted every important thing our allies had been telling us from the beginning. We made common cause with them, reversing every single argument and contention we had been making for nearly three years about our rights as neutrals and against the English blockade of German ports and neutral ports capable of feeding Germany. By doing this we admitted that it was our war as much as their war. We admitted that Germany was as dangerous, in principle, to our peaceful future as to theirs. We admitted that their armies and navies had been standing between us and our foe for over three years before we yielded the least help. We cannot deny that our responsibility for the war costs and after burdens was a joint responsibility with our allies. Let us review the facts:

Germany, with amazing skill and cold cynicism which we cannot conceive, undertook a war of conquest. One part of her plan was to destroy and ruin the economic life of France and Belgium so they might not become competitors in the world market for many years. Only a slight conception of the cold blooded, calculating brutality of this exists in America. What was done was so utterly foreign to our natures that we can not conceive it without seeing it. We know it intellectually, but not emotionally.

At Versailles, Germany accepted responsibility for what she had done, and agreed to make reparation, so far as possible.

A reparation commission was set up to assess these damages. America refused to take any part in it; said she wanted no reparation, and that what other countries claimed was their own affair.

Reparation experts and economists estimated Germany's ability to pay at about \$15,000,000,000. This figure had nothing to do with the amount of damages inflicted. The Reparation Commission recommended fixing the amount to be collected at \$15,000,000,000, of which France was to get about eighty per cent.

Then, at Versailles, the politicians got the upper hand, upset the plan of the reparation experts and boosted the figure to more than double the recommended amount, without any reference to Germany's ability to pay. They were blinded by avarice and greed.

Germany, never really repentant, saw a chance to escape, because the Allies were requiring her to do the impossible. She signed the treaty, but apparently with no real intention to even try to pay out. She has paid a little at intervals, but hopes to escape the consequences of her crimes by reason of the disagreement of her opponents. She has been recently declared in voluntary default by the Reparations Commission.

France, on the strength of the Reparation Commission's recommendation, borrowed \$8,000,000,000 on an internal loan, to begin rehabilitation and get her people back to work. She had previously borrowed \$7,000,000,000 outside of her own people during the war, to buy munitions and food. If Germany does not pay France, France cannot pay her own people, or her outside debts.

Meanwhile the politicians of the World Powers have rea-

lized that the Reparation program which they forced through at Versailles is wrong and cannot be carried out, without the ruination of their own industries, and the creation of an industrially powerful Germany. They now want to scale down the reparations to a point where their own industries will not be drowned in a flood of German products.

France, Germany's greatest creditor, is in the position where she refuses to hold the bag. If Germany's debt to France is to be scaled down, then France's debt to Great Britain and America must be scaled down in due proportion. In effect, she wants an international receivership, with no preferred creditors.

America refuses to consider any scaling down on her loans, and demands her pound of flesh, with interest.

France, in desperation, takes the Ruhr and neighboring industrial centers, in an effort to force payment from Germany.

America pointedly shows her disapproval of this action by at once withdrawing the American troops from the Rhine. We demand that France pay us, but will lend neither moral nor physical assistance to help her collect from her mutinous debtor.

Meanwhile the situation is becoming more and more involved—danger of new war, danger of Bolshevism in Germany—danger of any conceivable ill is becoming daily more acute.

The Near East, in which at this very time, our kinsman and ally, Great Britain, is stoutly striving against the bloody Turk to hold the gains of the World War for civilization, offers another illustration of the fatuity of our American policy. The freedom of the Straits is just as important to us as to any nation. We are willing to have it saved for us, but not willing to bear a part of the cost or danger.

France and Italy are both playing politics in this region, covertly encouraging the Turk, with secret treaties and understandings, while yielding half-hearted support to Britain in exercising their duties under the open Treaty of Sevres. The possibilities of such a cataclysm as may eventuate in the Near East and Far East are beyond calculation. A Russian control of Asia, and a Moslem uprising all over the world are two of them.

The above review gives a very imperfect picture of our foreign policy, on the most important issues before the world. We have repudiated the direct implications of our participations in the war. We have refused to take a place at their councils. We have side-stepped every attempt to draw us into conferences, except as observers. Our business men and economists see that a world clean-up of this gigantic unsettlement of the war must be made before we can be fully prosperous here, or any other country can be prosperous. But our politicians insist our war loans must be paid in full, no matter how much scaling down our Allies are obliged to undergo in their claims.

This attitude is nothing less than indecent on our part. This is the attitude which a pettifogging country lawyer might be expected to take. It is not the attitude of broad-minded statesmanship.

We, who have many times assumed moral leadership of the whole world, cannot now refuse to discuss a question of international obligation and steadily press to secure every partisan advantage we can for ourselves. The fact that our debt is moral, rather than legal, makes it all the more necessary for us to pay. It is by such distinctions that honor and character discloses itself. Any trickster will admit a legal obligation because he knows he can be forced to do it. Likewise, any trickster will disavow a moral obligation, if he thinks he can gain by doing so.

Our reputation, acquired by a noble list of unselfish acts in Cuba—in the Philippines—in China—in relief work all over the globe where suffering is—sustained by a century and a half of clean statesmanship, as the world has long seen—all this is at stake in our present attitude. It is the most precious thing America has—her reputation. It has taken us three hundred years to build it, but it can be lost in a short time.

We are the only nation that can compose this trouble. We are the only nation which has done big things in an unselfish way hitherto. The other nations all know we don't want any political gains or territorial increases ourselves. We could bring them all around a council table—every one a debtor to us—every one having confidence in our disinterestedness.

If we formulate a plan, state an amount which Germany can pay, and offer to scale down our loans in the same proportion as the Allies would have to come down if they accepted our plan, it would be accepted with peans of joy. They would not dare to refuse.

This discussion is not a plea for the League of Nations. It is a plea for American participation in world affairs. It is not a political issue, except in a technical sense. Both parties have a large, possibly a preponderating membership, whose moral sense is awakened, and who are becoming increasingly restive against our policy of non-participation, or repudiation. They feel that they have been led into taking a cowardly stand, of which they are ashamed. They long to see a man arise who has the candor to admit he was wrong, and the courage to do the right thing at the expense of his consistency and possibly his political future.

Statesmanship consists in leading reluctant and hesitating people forward and upward—encouraging them to take steps which demand intelligence, courage and self denial.

Any demagogue can persuade the common people to oppose reforms and improvements—that is what the ordinary human selfishness naturally tends to make them do. They require no assistance in that direction. But to induce people to accept reforms and to carry heavier burdens themselves that other shoulders less able to stand the weight may be relieved—that requires statesmanship!

Oh, for a leader who is willing to pay the price of victory! One who has the power of his convictions—coupled with the vision to sense this distracted world-drama, and the leadership to inspire us all to take the rocky path of a noble duty, instead of the downward path of ignoble ease. Oh, for such a man as Kipling portrays in his little poem:

If you can keep your head when all about you
Are losing theirs, and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting, too;
If you can wait and not be tired by waiting,
Or, being lied about, don't deal in lies;
Or being hated, don't give way to hating,
And yet don't look too good, or talk too wise;

If you can dream, and not make dreams your master;
If you can think, and not make thoughts your aim,
If you can meet with triumph and disaster,
And treat those two imposters just the same;
If you can talk with crowds and keep your virtue,
Or walk with kings, nor lose the common touch.

If neither foes nor loving friends can hurt you;
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds worth of distance run,
Yours is the earth and everything that's in it,
And, which is more, you'll be a man, my son!

And now, my friends, you know my thinking on this vital topic. You may not agree with all of it. But there is one part with which no one can disagree, and that is the responsibility of the individual for policies of his Government. That is what makes America American. A citizenship, intelligent enough to have opinions, conscientious enough to express them, and courageous enough to fight for them.

As good citizens, you have no more vital duty at this world's crisis, than to think this thing through, and when you have your mind made up, translate your thoughts into action. If you do that, I rest secure in your verdict and the pride and glory of America will come again into its own. (Prolonged applause.)

Toastmaster Gates: I made no mistake in coming down here to hear Professor Orton. His remarks and the remarks of Dr. Bustard are well worth any man's time to come from Chicago or anywhere else.

I remember the first convention I ever attended, Mr. Randall coaxed me down to Indianapolis to a tilemakers' convention and got me on the program. I was introduced to a machinery man on the convention floor who recognized I was a newcomer and he wanted to give me some good advice; he said, "I tell you, Gates, you can't learn anything from these darn frauds that get up and talk in the convention, but if you get a man in the corner in a lobby and talk to him, you can get information. But these darn frauds who get up and talk"—and just then they called my name and I got up to talk, and I never saw that machinery man again, but more and more I have become convinced he was right.

It is not up to me to take up any more of your time. I have a treat for you. I am going to introduce you to a man to whom I have never been introduced myself. Of course, that don't bother me at all, because I am going to introduce him

just the same. He is a poet, he was a Hoosier, but he reformed and came to Ohio nineteen years ago. He is known as Teddy Robinson and conducts the "Philosophy of Folly" in the Cleveland Plain Dealer, is author of many books, and I take great pleasure in introducing you, Mr. Robinson, to my friends. (Applause).

MINORITIES.

"Since most of our philosophy is folly,
And solemn fools as sages oft we see,
Real wisdom may be found in something jolly,
And folly is the best philosophy."

Edwin Meade Robinson, Cleveland, Ohio.

Mr. Toastmaster, Ladies and Gentlemen:—

I came here with a speech which you will be glad to know I have thrown away. It is getting late and I know you do not want me to keep you very long and yet I wanted to talk because I promised to and then I like to talk very, very much, but as for that speech on "Minorities"—I believe that is the subject they put down, I shall not talk about at all. You see they had to give me a subject, and it does not make any difference what the subject is, I would probably talk on something else anyway.

You perhaps have heard of the priest in Philadelphia. He was a very fine pastor, and a very good fellow, and a noble citizen; he only had one fault, he could not preach—if that can be called a fault. He had one sermon which he knew very well and which he delivered beautifully. That was on the confession. One day he was called on by a brother priest to come and conduct a service in his church. The priest said, "Now, Father, it is St. Joseph's day, and you will be expected to preach on that." So the visiting priest got up to preach, and he said:

"Now, as you all know this is the feast of the blessed Saint Joseph. Saint Joseph was the father of our Lord, and he was a carpenter. He made many things out of wood. Our confessionals are made of wood, and that brings me to my subject." (Laughter.)

That is the graceful way I worked up to my subject which I want to talk about, and it don't make much difference to you as I am only going to talk a few minutes.

As our Toastmaster said, I came from Indiana. I think it was George Ade who said "All the smart men come from Indiana, and the smarter they are the sooner they come." I came nineteen years ago, which was the age I got smart, because I was not very old nineteen years ago. I am not going to tell you how old, because it is about as old as I ever got. I think it is about the age of twenty-one we get the oldest, feel the oldest. There was something the matter with me, and I have found out what it was. In those days I used to write poems in dialect—that was before I moved to Ohio and learned to speak the English language correctly.

THE BACHELOR.

I'm a-gettin' old, dod-gast it! Plum old, before my time;
I'm a-missin' the gladness that came with Spring, when life was a
careless rhyme;
I'm a-missin' the scent of the first warm rains, that beats on the
fresh-cut sod;
I'm a-missin' the note in the robin's voice that sounds like a chirped
"Thank God!"

A feller's shorely a-gettin' old, when he never hears no more
The ring o' the singin' spring in his ears, like he useter do before
A green thing came in sight—when he feels no more in his tinglin'
veins
The life-sap start for the buds again, at the touch o' the first Spring
rains.

I'm a-gettin' old, by Christmas—and it ain't with the weight o'
years;
I got no troubles too hard to bear—no reason for sheddin' tears;
But I know the answer, an' every year it's easier yet to see—
It's because I'm a livin' an' workin' with the folks that's a-gettin'
old jest like me!

If I had a kid not more than five, to talk to now an' then;
If I had a raft o' kids to know, like I know such a raft o' men;
If I had a kid to 'sociate with, not more 'n two foot tall,
I c'd keep my youth to the crack o' doom, an' never git old at all.
An' God, how I long fer a baby's hand to clutch, in a baby way,
In my hair, an' pull it to beat the band, before that hair gits gray!
An' God, how I long fer a baby's eyes—fer the lisp of a baby's
tongue—

For the only recipe God's ever made that'll keep a feller young!

(Applause)

Having delivered that, I believed in it, and I changed my state from Indiana to Ohio, and then I changed my state again from the unmarried to the married. I had to come to Ohio to do that. And then in the way of Nature that childless state was miraculously changed, and I found the thing I wished for and wanted and wrote poetry about—it was when my little Bill was born. We called him Bill because he came on the first of the month. We were requested to move from the flat in which we had started our married life. I did not know until that time that in Cleveland it was against the law to have an offspring, if you lived in flats. I was very angry, and I did the same thing I always did and the one one thing that newspaper poets have in the way of revenge. I wrote a poem about it. It was not written against the landlord, but against the man behind, and when it was written I found it was under the same title as the other one called "The Bachelor," but it was written with a difference.

THE BACHELOR.

Once there was a bachelor who moved into a flat;
In the other flats were children, and he didn't care for that.
Moved into another flat, and then with rage was torn
When, in the flat above, one day, a little babe was born.
Moved to where they weren't allowed—and there he wouldn't stay
When he noticed children in the house across the way.

Finally he died. And, as is everybody's fate,
Found himself a-knocking at St. Peter's golden gate.
"Can't come in? Why not?" he said. Said the Saint, "Oh dear—
I'm afraid you couldn't stand the way we run things here—
Children, children, all about! No, it isn't fair.
Peace be with you! Go to hell—you'll find no children there!"

(Applause)

I think we have reached a place which shows that this world has broadened out. I recited that not long ago and right in the front row sat a Presbyterian minister, who led in the applause. We have abolished hell for children, except perhaps for neighbors' children. We don't believe in damnation any more. It is a good thing too, a mighty good thing for our hearts and our souls. I am going to keep right on now that I have got started on this subject.

We start a little fund—a little bank account to educate our children. We don't need to do it, for we don't educate our children they educate us.

THE POLLYWOG.

We wandered in the country, did the little boy and I—
(Now this was in the summer, when the roads were warm and dry)
We walked along a brooklet, and we sat upon a log,
And I told him how a pollywog at last becomes a frog

I pointed to the tadpoles, as they wriggled in and out,
Explaining to him how the transformation came about;
And he looked upon the wrigglers with a sort of glad surmise,
And the light of speculation was a-shining in his eyes.

"Why do they wiggle so?" said he, and frowned a puzzled frown;
"Because" said I, "until they're frogs they never can sit down.
Until their tails drop off, and till their legs begin to sprout,
There's nothing else for them to do but wriggle all about."

"I wish," exclaimed the youngster, as he shied a skipping-stone,
"That little boys were tadpoles, until they were fully grown;
I'd wiggle in the river, and you'd croak up on the bank—
And you could never spank me—'cause there'd be no place to
spank!"

(Laughter and Applause)

Things have changed a lot since the revolution, what I call the revolution. I am not talking about the war or anything like that, but the other things which came along; first, I guess it was the Eighteenth Amendment which came along and abolished the "nineteenth hole." Then it was the Nineteenth amendment which came along and abolished things which were privileged—you know we used to say "Woman's place is in the home. Women should never get the ballot and go down to the dreadful polling places. No, it won't do, woman's place is in the home"—and then comes along the revolution, and woman don't brush up against many drunken creatures because by that time liquor's place was in the home. I have been staying at home a great deal lately, and I have learned a lot of things I never knew before. You know there was a time when we used to talk about feminine inconsistency, and the master is the head of the house.

INCONSISTENCY.

"Get out o' the house, you brute!" she said,
 And the coffee pot narrowly missed his head;
 "Get out o' the house!" (And she fetched him a crack
 With a porterhouse steak!) "And don't come back!"
 He sneaked from the door, at the bitter word,
 And plucked from his whiskers the broken cup.
 But still through the window her voice was heard—
 "Get out! On your way! Shut up!"
 She called him up, ere an hour had gone,
 And "I'm going to my mother," her voice went on—
 "My home is wrecked, and my heart is sore,
 And I know you don't love me any more!"
 "Well, what is it now?" he wanted to know,
 And she sobbed o'er the wire this sad reply:
 "When you left the house, but an hour ago,
 You forgot to kiss me good-bye!"

(Laughter and Applause)

We used to talk of feminine inconsistency, but along with the revolution, they began getting into new fields, and Psychology discovered it and spread it about and Dr. G. Stanley Hall came out in a book and announced that every woman has two souls, while man is supposed to have but one.

TWO SOULS.

A woman has two souls. The sage
 Has said it, and I half believe it;
 This solves the problem every age
 Has had to puzzle it and grieve it.
 One soul intent on heavenly things,
 The other bent on fiendish revel;
 An angel, one, with snow white wings—
 The other, on a lower level.
 It is the one angelic soul
 That parts from me with tender yearning;
 It is the other, black as coal,
 That nags me when I'm late returning.
 The one, when all my hopes fall flat,
 Cheers me with counsel sweet and brave;
 'Tother, a moment after that,
 Hates me because I need a shave.
 Two souls! And when a woman dies,
 The two from one another sever;
 One goes to bliss, beyond the skies,
 One, to the brimstone lake forever.
 And when her mate tastes death's dark cup,
 This justice do the gods allot him,
 That whether he goes down or up—
 No matter where he goes—she's got him!

(Applause)

Mind you, I don't say it is wrong. Far be it from me to say or even think that Heaven would be Heaven were she not there. And I am willing to go fifty-fifty because I am a fair minded man, and say the same about the other place.

Now ladies and gentlemen, I am talking fast and not saying anything, in part because I want you to go home, I have got to catch a car myself, because I hate to go home so late, and I have to get in early, because I am in duty bound, and

I have strict injunction laid on me to waken Mrs. Robinson when I get in because she cannot get a wink of sleep until I do get in. A question was asked me by someone I was introduced to, and it is not a new one because this question is asked me often, "Now, Mr. Robinson, for nineteen years you have been writing a daily column for the local papers, every day you head it with a poem, every day for nineteen years—how is it possible for you to do that without your brain becoming a mush?" It isn't. Another one, "How do you write a poem every day?" There is no mystery to it. Every fellow's job is a mystery to the other fellow. Your job is a mystery to me, and my job may be a mystery to you. It would be by the time I got through. I make my living by means of a typewriter. If it were not for my typewriter, my little family would starve. But if my typewriter breaks down I am lost. I have to send for a man to come fix it.

THE TYPEWRITER.

The man who fixed my typewriter, he told me what was wrong,
 He fixed the little dingus that had bothered me so long;
 He straightened out a doo-dad, and he tightened up a screw,
 And the old machine made music like it did when it was new.
 It took but fifteen minutes to adjust that twisted gear,
 And I had monkeyed vainly with the thing for half a year.
 I voiced my admiration, as the man picked up his hat—
 "I wish," said I, "that I could learn to fix up things like that."
 The man who fixed my typewriter, he simply answered, "Why,
 It's something anyone can do—you've only got to try.
 You keep this oiled, you keep that clean, you give this screw a turn;
 Do thus, and so, and t'other, and that's all you've got to learn.
 Now sit and write a line or two, and see how smooth she goes."
 So I sat and wrote a jingle, which is easier than prose;
 And as I wrote, that young mechanic worshipfully sat:
 "My gosh," he cried, "I wish that I could do a stunt like that."
 I did not answer honestly, as he had done—not I—
 "It's something anyone can do—you've only got to try;
 You scatter accents evenly, and give your rhymes a turn,
 Do thus and so and t'other—and that's all you've got to learn."
 I did not answer honestly, like him—but what's the use?
 He has explained his trade, but still it's cryptic as the deuce.
 So let me think that fixing up machinery is hard,
 And I will still pretend that it takes brains to be a bard!

(Applause)

Now ladies and gentlemen, we have had a good time here tonight and we have listened to words of wisdom. If I had not been the last speaker on the program you would have heard a few words of wisdom from me, but the Cleveland street cars do not run with much regularity particularly after midnight and I live a long ways out, but I hope some time I may be able to be with you when I can make a regular speech and get to it first. (Prolonged applause.)

Toastmaster Gates: This has been a very fitting ending to our evening enjoyment. I now have the opportunity to make a speech you will be pleased to hear and it is—GOOD NIGHT.



Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

The MILD OPEN WINTER that has prevailed has greatly stimulated the building operations in Evansville and other towns in southern Indiana and there is quite a lot of building work now going on and a great deal more has been planned for the coming spring and summer. In the opinion of contractors and brick manufacturers, 1923 is going to be a better year than was 1922. Brick manufacturers in many instances are operating their plants steadily and many of them report that their winter trade has been unusually active and in fact better than in many years past. General business conditions in this section have been steadily improving for some time past. Collections are better than a year ago. During the past month there has been a marked improvement in the car shortage situation and in fact the situation is getting better all the time. Tile manufacturers in southern Indiana are quite optimistic over the trade outlook at this time.

Edward H. Long, 74 years old, brick and tile manufacturer at Sturgis, Ky., died in a hospital at Evansville on Tuesday, January 30th, after a long illness, his death being due to uraemic poisoning. The body was taken to Sturgis for burial. Mr. Long was well and favorably known among the brick and tile manufacturers in western and northern Kentucky and southern Indiana. He is survived by his wife, one son, three daughters and four grandchildren. He has been engaged in the brick and tile manufacturing business at Sturgis for a number of years.

The Industrial Brick Company at Boonville, Ind., furnished the brick for the new high school building at Millersburg, Warrick county, that has just been completed at an estimated cost of \$100,000.

Henry M. Clemens, head of the Cannelton Sewer Pipe Company at Cannelton, Ind., has been re-elected president of the First National Bank at Cannelton, which position he has filled for a number of years.

Henry C. Kley Meyer, president of the Standard Brick Manufacturing Company at Evansville, who has served the past two years as president of the Chamber of Commerce of that city, declined re-election.

Edward C. Kerth, city building inspector at Evansville, has been working on a new building code for that city, which is about completed and will be presented to the city council for ratification within a short time. Under the new building code the fire limits of the city will be extended and the shingle roof will be eliminated. It is also the intention of Mr. Kerth to eliminate the open vault in the city within four years after the new code goes into effect. Since the present building code in Evansville was adopted in 1911, there have been many new building materials placed on the market. The new code will cover all of these building materials.

Aaron M. Weil, pottery manufacturer at Evansville, who has been on the sick list for some time past, is able to be out again.

The Best Brick Company at Evansville has shipped the first carload of face brick to the site of the new Ford plant in Chicago. An order for 500,000 face brick was secured by the Best Brick Company by its Chicago representative and according to Walter P. Woods, manager of the Best Brick Company, this is the first time Henry Ford has deviated from Pennsylvania brick in all his buildings. One carload of brick will be shipped every day by the Best Brick Company until the order has been filled, according to Woods.

Reports from many of the towns in southern Indiana and

southern Illinois are to the effect that many residences to be built during the coming year will be constructed of brick. In fact more brick residences are expected to be built in towns in this section this year than during any year since the close of the world war. This phase of the business will add greatly to the volume of trade of the brick manufacturers of southern Indiana. The Standard Brick Manufacturing Company and the Best Brick Manufacturing Company at Evansville have been shipping a great many brick during the past two months to towns in Indiana and Illinois. Both these companies are looking for a very nice business during the coming spring and summer months. They say that their business will greatly exceed that of last year.

A good many public roads will be constructed in southern Indiana during the present year and in some instances the roads will be built of brick. Several streets in Evansville, Boonville and other cities also will be constructed of brick. Evansville has many miles of brick streets and some of them were built twenty-five and thirty years ago and they are in splendid state of preservation and are, in fact, as good as they were the day they were put down.

L. A. Folsom, of the Industrial Brick Company at Boonville, who was a business visitor in Evansville several days ago, expressed the belief that 1923 is going to prove a splendid business year and that the brick manufacturers in this section will have practically all that they can do. He says the year will bring in the largest volume of business of any year since the late war.

Bricklayers in Evansville, Princeton, Cannelton, Vincennes, Huntingburg, Jasper, Washington and other cities in southern Indiana are expected to work for practically the same scale this year as they received last year and the year before. In some cases the contracts of the bricklayers with the contractors will expire on the first of April, but contractors are expecting few if any walkouts this year. There has been a shortage of bricklayers in Evansville for the past year, according to Fred Zahn, secretary of the bricklayers' union.

A HOOSIER.

INDIVIDUAL INITIATIVE.

In the clayworking industry as elsewhere, and perhaps more so than in many other industries, research work has helped make progress. Indeed it has helped so much that we should keep up the enthusiasm for more organized research work in the future. Meantime, however, let us not forget that individual initiative is also the basis of a goodly measure of progress.

It is inventive genius and bright ideas of individual men that in the main have brought to us the big outstanding features of industrial progress. Thus we have had invented the steam engine, the electric motor and many other important things in mechanics which are traceable directly to individual initiative and the genius of some person here and there. These things should stand as perpetual reminders to us that while co-operative research is essential it should merely supplement and not take the place of individual thought and effort.

The hard drive on organized technical research does not by any means eliminate the call for or the chances of individual effort. The chances are just as good for personal recognition and reward today for ideas and discoveries and investigations that are of value as they have ever been in the past. So we should keep alive and encourage personal initiative both in the development of mechanical devices and in creating new ideas and methods in the clayworking industry itself.

Whether your trip to the convention was an expense or an investment depends some on how you interested and employed yourself while attending.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

HOLLOW TILE CAR LOADING RULES.

ONE OF THE PROBLEMS which the Hollow Building Tile Association has had to wrestle with considerably is that of breakage losses in transit and claim allowances for same. This has naturally led to questions of where the fault lies and to the matter of proper loading for safety of carriage. Incidentally, too, it has demonstrated that those who make a tile lacking in strength and other qualities naturally have more breakage than those who make a good strong tile.

In the course of discussing this problem at the recent meeting, C. W. Dixon of the Columbus Brick and Tile Co., Columbus, Georgia, quoted the following essential paragraph from the new loading rules:

"Hollow building tile must be loaded solid from end to end of car with cells running horizontally and lengthwise of the car. Load with staggered joints if necessary to make up any voids at sides of car, and all doorways to be boarded sufficiently to prevent tile from falling against door of car."

Both he and J. A. Dailey of the Shale-Hill Brick and Tile Co., Chillicothe, Mo., discussed at some length the question of claims, loss and damage, and from these discussions, as they appear in the printed report of the proceedings of the annual meeting of the Hollow Building Tile Association, those who are not already familiar with the subject should be able to get information and suggestions of value which should help reduce claim troubles by leading to better loading.

DENNISON H. WALLTILE.

We are in receipt of a folder of the Georgia-Carolina Brick Co. of Augusta, Ga., illustrating and describing their Dennison H. Walltile and illustrating some important buildings constructed with it, including the Francis Marion Hotel at Charleston, S. C. An interesting feature of their folder is the illustrated description of the three stock sizes in Dennison tile and their relation to brick courses. Their number 23 is equivalent in height to two brick courses and a mortar joint, and in width to two brick courses, while in length it is equal to one and a half. Their number 35 is equal in height to three brick and two mortar joints, while number 47 is of equal height of four brick and three mortar joints. Each of the three series or sizes consists of three units. The main or standard tile and its fractional lengths for one, corner tile for turning either inside or outside corners, and jamb tile for making wind and weatherproof junctions with casings. They also give tables showing how the tile conforms to brick measure and how to figure the quantity of tile used for a given wall. In a word, it is a folder with educational features as well as advertising qualities and should help in pop-

ularizing hollow tile generally as well as in building up a market for their special H. Walltile.

APRIL GROUP MEETINGS.

Among the group meetings of the Hollow Building Tile Association, scheduled for April, are:

Group 6 (comprising Kansas, Missouri and Oklahoma)—April 3rd.

Group 7 (Texas, Arkansas and Louisiana)—April 5th.

Group 5 (Iowa, Minnesota, South Dakota, Nebraska and North Dakota)—April 10th.

Group 3 (Indiana, Illinois and Wisconsin)—April 12th.

Group 2 (Ohio, West Virginia and Michigan)—April 17th.

Group 1 (New York, Pennsylvania, New Jersey and New England)—April 18th.

Group 4 (Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia and Florida)—April 19th.

HOLLOW TILE EXTENSION WORK.

ONE MUST HAVE access to the confidential reports made by the field men of the Hollow Building Tile Association to get a true insight into the good work they are doing in the way of creating new interest in hollow building tile and extending its use through specification by architects. That they are doing a splendid work among architects is easily evident. Also it is equally plain that the calls and talks of the field men lead architects into a more interested study of the hand book gotten out by the association and on the whole, good progress is being made in architectural circles.

The main problem right now seems to be that of ways and means to awaken a keener interest on the part of the local dealer and on the part of the local builder and contractor. Some reference was made to this phase of the matter by J. J. Amos, of the Humbolt (Kansas) Brick and Tile Co., at the annual meeting. He pointed out that all parts of the country are not alike, and that in the east presumably there are a great many architects because, he says, there are not many architects in his part of the country, so they must be in the east. He says the village carpenter or contractor is usually the man who plans the house, and, unfortunately, he knows nothing about hollow tile. Moreover, the average brick-mason neither knows hollow tile as he should, or understands as he should, how to make plans for a house. Mr. Amos might also have made the point that many builders in his and other sections of the country look to the local dealer for plans and suggestions about building. So there is a big field of work here for field men mission work to be done among local

dealers and building contractors and bricklayers, especially in the smaller cities and towns.

Here is the big opportunity for extension work in the use of hollow building tile. There is not as much hollow tile or brick either used comparatively in these districts as in the big cities, but the hollow tile idea is already sold so far as the city skyscrapers are concerned, while there has been but little in the way of specific educational exploitation of hollow building tile in the smaller cities and towns and the country districts as a whole throughout the country. This, therefore, is the big field of opportunities, and while the architects must be seen and cultivated and sold on the hollow tile proposition, the fact should be kept persistently in mind that the big field of opportunities for good mission work for hollow building tile is in the outbuildings on the farms and in the smaller towns and cities.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



SECRETARY HERBERT HOOVER'S "building code committee" has turned in its report, and the brick manufacturing industry will be considerably affected by the provisions thereof, should the recommendations of the committee be adopted. For instance, the code as recommended to be placed in force would permit 8-inch brick walls and 6-inch concrete walls for two and one-half and three-story dwellings accommodating not more than two families each. Only about 40 per cent of the present city building codes, it is stated, permit 8-inch walls in such buildings. Eight-inch walls of hollow building tile, hollow concrete block or hollow walls of brick also would be permitted if they did not exceed 20 feet in height.

Metal lath and plaster on wood studs properly fire-stopped is approved for party and division walls, but at least every alternate wall in row houses, the report says, should be 8-inch solid brick or 12-inch hollow masonry.

Requirements suggested for quality of hollow masonry units agrees generally with the present practice, but those recommended for brick are somewhat below the medium grade established by the American Society for Testing Materials.

Foundation walls of brick would be required to be 12 inches thick for excavated enclosures. Special hollow building tile 12 inches thick would be permitted for foundation walls of frame houses.

While, as Secretary Hoover announces, the adoption of the report would result in "a very appreciable money saving to millions of American families," there appears to be no room for doubt, but that the country's total brick requirements for building purposes would be substantially reduced. The provision permitting the use of 8-inch brick walls for two and one-half and three-story dwellings, where the building codes of over 60 per cent of the cities of the country require 12 to 15-inch walls in such buildings, would alone reduce the brick requirements for such structures greatly.

The United States Bureau of Standards has written 100 manufacturers to furnish it with samples of clays used for making "saggers," employed in the manufacture of chinaware, etc. In these letters request was made for the names of the clays employed, dealers from whom clays could be obtained and the district where they were mined. This information was cheerfully given by a very large proportion of the concerns addressed. So far as can be judged from the information obtained, about 90 different clays, or rather clays sold under approximately 90 different names, are being used for

saggers in the United States. A letter has been written to producers of and dealers in sagger clays to obtain information necessary to make the list more accurate and more easily understood.

Samples of 52 different clays, representing as well as could be judged all the important types, have been sent for and many of them have already reached the laboratory. These are being obtained in 200-pound lots from the users rather than from producers or dealers in order to eliminate uncertainties as to whether samples are representative of the commercial output of the mines or pits. Manufacturers are contributing these rather large samples from their stocks and prepaying the freight to Washington. This illustrates the whole-hearted manner in which industries are responding to the Bureau's calls for assistance in its investigations.

In order to classify the sagger clays according to their properties, they are being subjected to the following tests: Water of plasticity, shrinkage, porosity, transverse strength and burning behavior at five different cones. Some work has been done upon all the clays received, and in getting this work under way considerable attention has been given to details of test methods. It is considered necessary, in order that the results of these tests may be of value, to devise, where necessary, methods or modification of methods which will insure greater accuracy than is usually attained in such measurements. This involves the elimination of sources of variation all along the line in order to obtain close checks in the final results. As this is a feature which justifies closer attention than it has received up to this time from ceramic industries, it is proposed to include in the report of this investigation not only averages, but maximum departures from these mean values.

A bill was introduced in the House of Representatives to pay the C. H. Klein Brick Co., of Chaska, Minn., for a large quantity of brick furnished by that firm to a government contractor named S. N. Opdahl for the building of certain structures for Indian schools in South Dakota. According to the statement accompanying the bill the contractor failed to complete the contract, and defaulted in meeting his obligations to those from whom he purchased his materials. The bill was passed, and the claim of the C. H. Klein Brick Co. will be adjusted.

The Bureau of Foreign and Domestic Commerce is in receipt of a communication from a building concern in Norway expressing the desire to be placed in touch with American manufacturers of fire brick and refractory materials. The firm desires to secure the agency for that country for the lines named, and the inquiry doubtless will open the way for a profitable foreign trade connection. Additional details and other particulars will be furnished such of our manufacturers as may be interested if they will address the bureau, referring to inquiry No. 5101.

For the second time within a few months fire visited West Bros. Brick Co.'s yards a few days ago and caused a loss of upwards of \$10,000. Five horses were burned. The plant is located just across the Potomac River, south of Washington. Sparks from a passing locomotive are believed to have started the fire. The loss is covered by insurance.

The Bureau of Foreign and Domestic Commerce, Department of Commerce, reports having received a communication from an importing concern in Bulgaria, requesting that it be placed in touch with American manufacturers of brickmaking machinery, also machinery for making other clay products. The firm will pay cash outright, and desires also to secure the agency for its country for the machinery named. Price quotations should be given c. i. f. (cost, insurance and freight) Bourgas, Bulgaria. Correspondence is preferred in German. The bureau points out that foreign inquiries such as this open the way for profitable trade connections abroad, and should receive the serious and prompt attention of our manufacturers. Complete details and other particulars will be furnished such of our machinery manufacturers as may be interested if they will address Bureau of Foreign and Domestic Commerce, Washington, referring to inquiry No. 5196. ALTHOMAR.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

Dies for Hollow Building Tile.

QUESTION: Are dry dies best for hollow building tile?

Answer: That depends a great deal on the nature of the clay. A plastic clay runs very well with a dry die without lubrication but a short sandy clay might run rough on a dry die and smooth with a lubricating die. Sometimes a plastic clay runs rough and then it must be opened up with grog or sharp sand to prevent cracking at the corners. Often any clay does not run good through any die, if the machine is an auger machine which has no force feed and the clay heats and backs up, in fact so hot that the ware can not be handled. Many auger machines are not suitable to make brick and tile both with the same augers and therefore any one wishing to make both brick and tile on the same machine should send enough clay to the machinery people to have them test out what equipment he needs before buying.

A Practical Table for Hollow Tile.

QUESTION: Is the hand cutting table more practical than the automatic table for hollow building tile.

Answer: It seems the general rule that plants that make only tile use the automatic cutters and those that make brick and hollow tile use the hand cutters. When making hollow tile the brick cutter is pushed out of the way and the hand cutter put in place. In plants where brick are made on one machine and hollow ware on another machine then we favor an automatic cutter. Sometimes these automatics become stubborn like a Kentucky mule and they stop and won't go until a man comes from the factory to adjust here and there.

Effect of Oil Lubricating Dies on Lamination.

QUESTION: What effect does the oil lubricating die have on lamination of brick?

Answer: That is a question that has not fully been answered. You try and mix some clay and make a few separate pieces and dip them in oil and see what trouble you have in uniting them together. You can do it only by breaking up the pieces and working them over before you succeed.

The same is true with the ordinary horizontal auger machines except those that have been improved lately.

The best machines for oil lubricating dies are those that have vertical augers which force and pug the clay and bring it down to the horizontal augers which tear and shear the clay, in fact cutting and breaking it up and in this way the best brick are made. Especially with short, fine-grained clays which no horizontal auger machine will handle without big loss in drying and burning. Of course it depends a lot on the clay.

No machine is suitable to make good brick with every clay. It can't be done.

Therefore have your clay tested to fit it to the machine or the machine to the clay.

Information Wanted in Regard to Pulsichroming Brick.

QUESTION: In your issue of last January there appeared an article on the "transmogrification of common brick" which interested us very much and we have eagerly awaited further information on the subject, but so far without result.

Can you tell us where the machines can be secured and the coloring materials procured? We take it that the process is a simple one and that these mineral colors are put on with a common spraying machine, similar to those used for putting on whitewash or paints, after the green bricks are dried and before burning, and that this latter process colors the faces permanently.

Also can you tell us where the various test cones can be bought and where we can secure full information re their use. Technical books on brickmaking all mention them but seem to take it for granted the ordinary brickmaker knows all about them.

Answer: The machine for putting the coloring matter on the brick is a patented device known as the "pulsichrometer," which the Clay Service Corporation leases at a rate of approximately \$1.00 per thousand of brick. The coloring materials can be procured from various concerns in the chemical line.

Regarding request for places to buy test cones, these can be obtained from Col. Edward Orton, Columbus, Ohio, or the Mayer China Company, Beaver Falls, Pa.

A Problem in Drying.

QUESTION:—We have thirteen, 30-foot, round down draft kilns. Are making about 50,000 face brick per day. We have a good waste heat dryer with 28 tracks, each holding 14 cars. We are making brick, also tile in this plant and change off from one to another about once a week; when we change from tile to brick we find we do not get enough heat and have to stop making brick for a day or so. If we could make tile one day and brick the next we would have plenty of heat but as our cutting tables are so heavy we cannot do that.

Who can give me advice as to an apparatus to augment heat to our hot air ducts. We do not want the gases to enter our dryer as that will injure the color of our ware.

We have 20,000 feet of pipe coils for the exhaust steam, but in winter this does not help, as much of the steam is used to heat storage shed, etc.

I would be very pleased to hear from someone as to the supplying indirect heat from a furnace, etc. We need this only for the winter months.

Answer: It is practical to build an economizer to use the kiln combustion gases for heating and thus supply the dryer with hot air in excess of the hot air from cooling kilns. This involves induced draft from the kilns through the economizer, and many yards are so arranged that it is not practical to install such an induced draft system, or at best the installation is expensive.

One could build an economizer furnace for direct fuel operation, but we are wondering if this would be the best solution of the problem. Such a construction, and also the induced draft equipment will leak occasionally, and until the leak is found and repaired, combustion gases will find their way into the dryer and injure the color of the ware, as your correspondent states.

If wood were available the simple solution would be a direct fired furnace since combustion gas from wood does not affect the color of the product because it contains no sulphur.

but wood is becoming scarce and likely this is true in the locality in question, otherwise the question would not have been asked.

A small kiln filled with checker work could be built and fired in advance of the change from tile to brick, and the heat from this booster kiln could be used to tide over the interval of heat scarcity.

It is easy to criticize an operation when one has no information, or at best very meager information, in regard to the operation. Naturally the first thought would be, "Why make such frequent changes?" The fall, winter and spring are the seasons for tile and the summer and fall for bricks.

Most yards make up enough tile when the brick season is slack to supply their trade throughout the tiling season, and the remainder of the year is on bricks.

Again, if the change from tile to bricks and vice versa is once a week as stated and a "day or so" is lost each change from tile to bricks, and since daily changes do not interfere with continued operation, why not put the two cutters on a single frame and the frame on a track—a shuttle track—so that one cutter could be quickly rolled out and the other into place. A half hour, or an hour at most, every night will suffice for the change, and this extra time is well paid if it saves the loss of a day or more each week. It may be that the factory arrangement will not permit this arrangement.

Finally, why not use steam for this changing period? As stated, the steam coils are installed and can be used for drying when the exhaust steam is not required to heat the factory. Why not use live steam in the coils for the drying? All the equipment is installed and it only requires boiler fuel, which would be required in any outside auxiliary furnace. Our thought would be to make the campaigns of each product longer and tide over the change from tile to bricks with live steam. Why not?

REFRATORIES ASSOCIATION AND U. S. BUREAU OF MINES TO COLLABORATE IN FUEL INVESTIGATIONS.

An investigation looking toward the reduction of the amount of fuel used in burning refractories, shortening of burning time and the improvement in the products will soon be opened by arrangement between a committee of the Refractories Manufacturers' Association, with headquarters in Pittsburgh, and the United States Bureau of Mines. The inquiry will be made at refractory plants at Baltimore, Brooklyn, Wonelsdorf and Salina, Pa.; Hayward Station, and Taylor, Ky., and Ottawa, Ill.

The Bureau of Mines laboratory car will be used as laboratory and living quarters by the investigators, who will spend a month in each plant. The investigators will be E. P. Ogden, in charge of the work; Alfred Whitford, A. E. Rupp, A. H. Fessler, W. E. Rice, R. F. Lunger and F. Wentzler. The work will be under the supervision of G. A. Bole, of Bureau of Mines Ceramic Station, Columbus.

A. S. T. M. ANNUAL.

THE TWENTY-SIXTH ANNUAL meeting of the American Society for Testing Materials is to be held at the Chalfonte-Haddon Hall, Atlantic City, the week beginning Monday, June 25th. This hotel is operated strictly on the American plan and rates for a single person with private bath range from ten dollars a day up, without bath six dollars to eight. Those desiring to make reservations should address the Society at 1315 Spruce Street, Philadelphia.

THE SITUATION IN NEW YORK.



AD WEATHER HAS had a slight retarding effect upon winter building activity in and around this center. There has been, and still is, progress toward a steady increase in preparations of plans and commitments, and in summarizing would indicate a busy season ahead.

Activity, as a whole, in the construction field, is moving steadily despite the severe weather this section has experienced during the past fortnight. Outside work has been delayed to some extent by snow and receding temperatures, the latter in many cases going low enough to cause men to stop work. This is, of course, applicable to outside jobs only. Although the weather has been extreme for outside construction, enclosed work has been going along rapidly and preliminary work toward early spring building is in evidence at many places.

The labor cloud is again appearing on the horizon. Those connected with the local building industry are beginning to show anxiety as to the outcome. Some are of the opinion that the situation should be nipped in the bud. There are threats of excessive wage demands by certain trades. These demands, apparently, are effecting only one type of builder—the speculative class—and only in one section of the city. Should this situation get out of bounds, it will hamper the building program for the coming season. There seems to be a large amount of building accumulating for the future and the indications all point to the strain the local building industry will be subjected to and the limits of its facilities for producing materials and placing them in the various works.

Another feature to be noticed is the slowing down of the building material markets. This can be attributed almost entirely to the inclement weather experienced during the past few weeks. There has been no direct falling off of potential demand noted.

The wholesale market for common brick during the past week or more has been dull, and in fact, exceedingly dull as compared with other weeks. This is due to the severe cold weather and the large amount of ice in the river and slips along the water-front.

It is reported that only a barge load of brick was sold during one of the past weeks, with no arrivals noted. Inquiries for future brick are brisk. This is for construction during next spring and summer. Indications at present point toward an exceptionally heavy demand for the coming season, and for activity will compare favorably with last year. No anxiety prevails regarding a shortage, as it is felt the up-river manufacturers will be able to produce all the bricks required.

Considering the extreme weather, the demand for face brick is greater than would be expected with such conditions. There have been quite a number of large apartment house and commercial building operations recently released for bids, where the face brick requirements will reach a large total. Some anxiety is felt among this class of manufacturers, yet the feeling is optimistic regarding the outlook for the oncoming season, provided they are able to secure fuel for production and cars are available for transportation.

As a whole, the price situation is firm, with quotations still \$20 to dealers in cargo lots for commons; and second-hand brick in lots of 3,000 at the job, \$47. Face brick on the job are quoted \$42 for both Smooth and Rough Reds; \$45 for Smooth and Rough Buffs; Colonials \$47; \$50 for Smooth and Rough Grays. Hollow tile quotations remain very close to the former levels. Three-inch is marked 12 cents a square foot; 4-inch 17 cents, with 6-inch at 19 cents a square foot.

It has been reported that the Brooklyn-New York Fire Brick Works has been incorporated with a capital of \$100,000 to \$750,000.

A. L. B.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Running Plant Overtime.

Editor The Clay-Worker:

Find enclosed check to pay for The Clay-Worker for two years.

As I know you are interested in brickmaking in all localities, wish to state that our plant here at Boonville, Ind., is running full time, with as much overtime as we can work to advantage, and as many orders on our books as we can take care of in three months.

Thanking you for The Clay-Worker, as it is one of the papers which we certainly appreciate, we are,

Yours very truly,

H. V. HAY.

INDUSTRIAL BRICK WORKS.

Concrete Roads—Why They Fail.

Editor The Clay-Worker:

Concrete, as every engineer knows, is absorbent to a greater or lesser extent, dependent largely on the richness of the mixture, and during the inclement weather, experienced in most of the states north of the Mason and Dixon line—during the fall, winter and early spring, most of the concrete roads suffered badly by reason of the rain soaking into the body of the road, and a frost or freezing weather, solidifying this moisture into ice. Ice in the making expands—note how it breaks the bottles of milk left out of doors during the cold months—the same action takes place in the slab of concrete forming a road bed and surface in concrete highways.

To the best of the writer's knowledge, there are no concrete roads in the north or east, that have withstood the disintegrating action of five winters, most of them standing considerably less.

Experiments have been made in Pennsylvania with concrete base and a surface made of asphalt, and when the asphalt cover is not under two inches thick, it stands fairly well in bad weather, but an asphaltic top on a concrete base, is NOT a concrete slab, as most concrete roads are. The asphalt of course runs up the cost per mile, not only the initial cost, but also the maintenance cost, which in the long run is the greater, so that the cost of that kind of construction, in many places is not used by reason of its construction and maintenance cost. Thinner coats of asphalt have been used, but in hot weather, they blister and the abrasive action of the rear tires, pulls the blisters off, leaving space for moisture to penetrate in bad weather, so that to a large extent, the purpose of the asphalt cover, is nullified.

Other experiments have been made with a concrete slab for the base, and vitrified pavers for a cover, the pavers being bonded together with tar, and not cement grout—which was formerly used—and in the brick top, on brick surface, the bricks themselves being impervious to moisture, and the tar mortar used instead of cement mortar, allows the bricks to give and take, when there is changes in atmospheric conditions, which can not be said about the concrete monolithic road.

The use of lugs on paving bricks was not approved by some engineers as they claimed the lugs separated the units too much. Today the standard method of laying the brick on top of the slab is to swab the top of the slab with hot tar, then lay the lugless bricks in this tar, and fill in the joints with hot tar, making a road that is at once resistive to the most severe abrasive action of the rear wheels on the larger sized trucks, and also impenetrable to moisture.

In cold weather the tar filler contracts slightly, but by reason of its plastic nature, even when cold, it always adheres to both brick and base course. This construction is permanent and once laid under technical supervision, where construction is given its proper attention, and nothing but the best tested materials used, this type of brick surfaced concrete road is a permanent thing, its first cost being in line with the other types, and as there is no maintenance on that type of surfacing, the county, city or state is saved that continual drain on its finances by paying for resurfacing or remaking, one being as bad as the other.

It has been found preferable to lay bricks that have a very fine wirecut surface exposed to traffic, rather than the smooth faced type, the reason for which is that the brick with the smooth face is more likely to shell off or spall than the one with the fine wirecut face, in addition, the tar adheres better to the edge of the brick when wire cut than it does when smooth.

Out in the west in some places in Kansas, paving blocks are now being used that have all six sides slightly ruffed with a small sized wire, and it is considered to be standard construction at this time, in other words, no face on the block is what you may indicate as "die finished."

There have been millions of dollars spent in concrete monolithic roads, but the public that pays is being heard from and in the future, undoubtedly, specifications for all hard surfaced roads will be changed by the various highway engineers to conform to this later and far superior type of road construction.

It is not the purpose of this article to state just how long it will be before this new construction is used generally all over the country, but it will not be long.

First cost in this type—brick surfaced with tar filler—is the last cost, and the maintenance is nil. Brick roads have been in use for heavy traffic for twenty-five years and they are still in good shape, so good, in fact, that it is hard to tell just what is an average life for them—they may last twenty years longer.

Show us the concrete road that has lasted twenty years, or one-fifth of that number of years.

JAMES P. WILLIAMS,

Consulting Engineer to the Brick and Tile Industries,

St. Louis, Mo.

A School for Bricklayers at Salt Lake City.

Dear Mr. Randall:

Here is a photograph of our bricklaying class of eleven young men and their instructor. This is a class that is taking instruction in bricklaying at the West Side High School of Salt Lake City. These boys are all young men who are working at different work around the city. Five of them are working for The Salt Lake Pressed Brick Co. They go to this school to learn the art of laying brick. They attend school from 8 o'clock in the morning until 12 o'clock noon, then they go home and get their lunch and in the afternoon they work at their different work. Arrangements have been made for those working for our company to come on at 3 o'clock in the afternoon and by working late they get in

their full shift each day. In this way you see the boys are earning their full wages.

You will notice in the photograph a small brick building that has been built in the schoolroom. The rafter has been put up in order to build the gable. Take notice how the arch is formed over the doorway. This, of course, is just common brick work but I think it is very good. The instructor tells me that the boys did all of this work themselves. He merely gave them the dimensions and size of the building and they laid the work out, made a little drawing of the arch, in fact, did all the work. He said he did not do a thing pertaining to the building except giving instructions as to the size, etc. They laid the building out, designed the arch, cut the rafter and put it up, in fact, they did everything pertaining to the building, and they have been attending school less than three months. You see them standing around their mortar boards. They are taking a lesson in how to do buttered work.

shape from the simplest single cell to the most intricate cellular structures. There is a far greater range in the physical characteristics of the different diatoms than there is in the range of quality in woods. It would be just as sensible if one were to specify "wood" for furniture, or structural purposes, without stating what kind of wood was required, as to simply specify "diatomaceous earth" without designating the particular grade of earth required.

In addition to the great difference in the fundamental character of diatomaceous earth, many earths are contaminated and interlaid with varying quantities of clay and other impurities which make them wholly unfit for industrial use, no matter by what manufacturing process they may be treated. It has not infrequently been called to our attention that someone has tried to use a diatomaceous earth commercially without success after reading some article referring to the use of diatomaceous earth without specifying the brand of earth, and upon investigation we have found that they had not



A Class in Bricklaying, High School, Salt Lake City.

I assure you I am very much pleased with this class. Their instructor is a contractor in Salt Lake City, a very competent man. I think he is getting his class along in splendid shape.

Yours truly,

JOHN P. CAHOON,

Salt Lake City.

Pres. Salt Lake Pressed Brick Co.

DIATOMACEOUS EARTH.

Editor The Clay-Worker:

There was recently published in your columns a letter suggesting that where reference is made to diatomaceous earth in technical journals, trade names, such as "Sil-O-Cel", "Celite", "Filter-Cel" should not be employed.

Diatomaceous earth is composed of the skeleton remains of a large variety of marine organisms. In fact, there are some eight thousand varieties of diatoms that have been listed and these vary in size several thousand per cent, and in

recognized that there was a great difference in the physical structure and chemical composition of earths.

Practically all large users of diatomaceous earth recognize the correctness of the above statements and would not think of purchasing such a product without specifying the specific type of earth required.

The trade name of any product is the protection of the manufacturer and the consumer and such trade names must be used in technical articles if the reader is to be furnished information which he can make use of.

Very truly yours,

R. J. WIG, Vice-President,
Celite Products Company.

There may be a lot of men who deserve to be killed by the female of the species, but somehow this thing of the women folks taking the law of justice into their own hands so freely of late doesn't make a big hit as an act of justice.

THE CHICAGO SITUATION.



WITH A SPLENDID record for building—the best in its history—behind it in 1922 Chicago opened the new year with prospects for setting still another record. There was every reason why such a sequence should be the normal and expected thing so far as surface indications at least could indicate. In spite of last year's activities the city is still far underbuilt as to residences, and with many apartment building landlords showing an inclination to gouge the renter still more harshly this spring (although a mild winter and no increase in janitor costs did not warrant increased rentals), it would be reasonable to expect that the individual owner and the investment, as well as the speculative builder, would be the prime movers this spring and summer in a building boom the like of which was never seen in this city.

The prospect for such a situation seemed bright right up to the first week of the present month, and he would be rash indeed who would lightly prophecy that the anticipated building boom would not materialize. Nevertheless, there recently have come to the surface certain factors that cannot be overlooked and which would cause a building material manufacturer to make a careful survey of the whole field of possibilities in trying to estimate the demand which he will have to meet in the next nine months.

To consider first the negative elements in the equation: S. W. Strauss & Co. of this city, in its monthly building survey, has just made the statement that structural steel has shown a marked advance in price during the last month, and that "virtually all other important building materials show indications of rapidly approaching advances." The survey also shows that while the labor situation is not alarming in any particular, there is not an abundance of either skilled or common labor, and the tendency of wages for the country at large is upward. When one considers that some of the large prospective building projects, notably such as that of the new home for the State Bank of Chicago on the site now occupied by the Temple building at LaSalle and Monroe streets—originally known as The Temple, and erected by the W. C. T. U. as a memorial to Frances Willard, have been postponed indefinitely until such time as building costs should go lower, the first natural thought is that advancing construction costs will ring the knell not only for a building boom, but for any substantial amount of building activity in Chicago. This has been the idea of the leaders in the Citizens' Committee to enforce the Landis award, and to avert such a catastrophe it has rendered invaluable service to Chicago and its helpless citizenry, not only by battling valiantly against labor union aggression, against crooked labor leaders and against cowardly or corrupt alliances between weak or crooked contractors and labor pirates (thus keeping building costs to a much lower level than otherwise would have been possible), but also by not hesitating to put forward statements from time to time calculated to halt rapacity of unreasonable landlords. No prudent investor can be expected to put up a building if it is going to cost so much that the earning which he foresees for a period of years will not repay the invested capital with a reasonable return. If the man who is now holding back is right in his estimate of the probable rentals in the next dozen years, the logical conclusion would be that if costs went up, or if indeed they did not somewhat drop back, building activity would receive a severe setback.

There are, however, other views and elements to consider. Many are convinced that costs of service and commodities of all kinds have reached a new level; that there will be no going back to the less expensive standards of a few years ago, and that, in the main, any adjustments will be upward to meet the new level. A very few, and these, one regrets to note, chiefly of the profiteer class, go even further and insist that all costs are going even higher. These two groups take issue sharply with the views above presented, which hold that costs must recede somewhat, even if not to pre-war levels.

They seize upon the argument that plentitude of gold and consequent cheapening of the world's great monetary standard has depressed the dollar's former purchasing power; in other

words, boosted commodity costs. They add that the new policy with reference to immigration has put up, and will keep up, the price of labor, skilled and unskilled. They scoff at the idea of increased costs stopping building activity, because they say the city is so far underbuilt that it can use a tremendous quantity of new structures, and that if rentals have to remain high or go higher to give a fair return on the investment, readjustments upward will soon provide the victims with the wherewithal to pay the price.

If either of these latter two views are correct, the man who plunges boldly in and pushes building for investment or speculation right now, will be a big winner. If those who think we are still suffering from a post-war "katzenjammer" and that we still face harsh readjustments downward, are right, their caution should be their great reward, for at least they ought not to lose as heavily as the plunger. The man who could today foresee with clarity and accuracy conditions six months hence would score heavily if he could finance his judgment adequately.

Out of all this mess and in the face of the fact that the 1923 building boom does not look quite so good just now as it did a couple of weeks ago, the one thing that enables the building material man to sleep at night and get a reasonable amount of joy out of life is the greatly underbuilt condition of the city, especially with reference to residences, single and multiple, and the steady, strong, normal growth of Chicago, which alone requires a vast amount of building, both industrial and residential, merely to keep pace with increasing demand.

It is interesting to note that as the reports from the building commissioner's office appear week after week that the estimated costs of improvements planned are far greater in proportion to estimated costs for the corresponding 1922 period than are the actual number of projects as compared with the number for the same period last year. This in part may be explained by the fact that downtown building is going ahead in an encouraging way, and also that industrial construction is having an inning. Also there is the fact that a considerable number of large hotel enterprises are being gotten under way, and that these naturally represent rather large items of investment. Many of these are apartment hotels scattered about the city, and apparently are a response to the problem of many of comfortable means who shrink from the present rentals and attendant costs of individual four to eight-room apartments. Some of these are approaching the downtown district, such a one being the contemplated \$2,000,000 apartment hotel said to be forecast in the purchase by Walter J. Rinn of the southwest corner of Delaware Place and Seneca street. The hotel is to be fifteen stories high. Also out in Streeterville and just a block further south in Seneca street, at the corner of Pearson, the Hotel Pearson is already under way. Several other entirely new projects of this character are soon to be announced, it is said.

A family apartment building to contain eighty-four, forty-eight each, with five rooms and two baths, and thirty-four three-room apartments. Automatic elevators and mechanical refrigeration are to be installed. The cost of this building is estimated at \$800,000.

Another high-class apartment building, containing twenty-four apartments of four, five, six and seven rooms, renting from \$135 to \$350 a month, and costing about \$300,000, is soon to go up on the south side of Aldine Square, 200 feet west of Sheridan road.

As against this and other constructive announcements comes the statement that erection of the 4,000-room Stevens Hotel in Michigan avenue has been temporarily delayed owing to steadily increasing costs of steel and other building materials. The Economist states that between April 1, 1922, and February 1, 1923, the cost of steel alone for this structure went up \$800,000, and that since February 1 there has been another jump of \$100,000. Until more normal conditions return all proposals which have been submitted are rejected, according to the published announcement.

One of the big downtown structures just about under way is the Central Merchandise building, which has been planned by Marshall & Fox, architects, for Henry F. Bloomfield, president of the Bloomfield company of Cleveland, Ohio, makers of women's ready-to-wear garments. It will stand on the former site of King's restaurant in North Wells street, on the west side of the street, between Madison and Washington streets. The building will be twenty-two stories high and will cost in

the neighborhood of \$2,500,000. On the first floor will be five shops, a large clubroom and a cafe.

The next three stories will be devoted to shoe manufacturers, the next four to hat manufacturers; then will come eight floors for manufacturers of women's apparel. There will be two floors for jewelry firms, three for dry goods manufacturers and one for miscellaneous trades.

Since writing the fore part of this article, the papers carry the announcement that the Landis Award Citizens' Committee has agreed with the bricklayers' union on a scale of \$1.25 an hour for the ensuing year, the bricklayers agreeing not to strike because non-union labor is used on the same job with union labor, nor because of the use of labor-saving devices or machinery. This is an advance of 15 cents an hour over the present scale and may be another straw to indicate that the wind is not blowing toward a barometric "low" in cost reduction.

SCRIP.

MODERN FIRE PROOF MACHINE FACTORY.

THE CLEARFIELD MACHINE SHOPS of Clearfield, Pa., were organized in 1868, and have been continuously engaged in manufacturing clay machinery for more than fifty years. The gradual expansion of the business made

OHIO CLAY NOTES.

PAUL B. BELDEN, PROMINENT manufacturer, an official of the Belden Brick Company, was recently elected president of the Canton Chamber of Commerce. Belden had served as president of the old board of directors.

Mr. Belden reports that not in years have prospects been brighter for the industry than the present time. He says that a survey recently indicated Canton would see more home building the next six months than during any like period in its history.

"Summed up, the situation locally presents two discouraging factors, that of inadequate transportation facilities and the shortage of common labor," said Mr. Belden. "It is not so much the lack of empty cars, but railroad officials say there is a shortage of motive equipment which, of course, is necessary to move brick shipments and insure deliveries."

According to Mr. Belden, the brick industry in the Canton district is enjoying prosperity and all plants are active, some working overtime in order to get out sufficient brick to meet the demand. "The demand at this time is strong and will continue such for months to come from all indications," Belden said. Price inflations must be prevented to assure a busy spring season, as further advance in price will discourage to an extent, much of the contemplated building.

The labor situation in some localities has not reached the



Attractive Fire Proof Plant of the Clearfield Machine Shops, in which Burned Clay Products Predominate.

necessary several additions to the original plant buildings, until in 1921, having again outgrown their quarters, the company began the erection of an entire new plant on a site about a mile distant from the old. The machine shop unit, including blacksmith shop and woodworking shop, was completed and put into operation early in 1922. The foundry was completed and occupied at the close of the year. All buildings are of modern steel construction and are practically fireproof. Clay products are used wherever possible, the outside walls being dark red brick, laid up in black mortar, and the interior walls yellow brick and tile. The buildings contain approximately 350 tons of structural steel and were erected by the company's own structural steel department. They were also designed throughout by the company's engineers. The chief idea in developing the layout was to facilitate the easy flow of materials from the raw to the finished product, mechanical means being used for handling wherever possible. The plant is electrically operated throughout, and is flooded with light from continuous sash, which fill nearly all the outside walls. With their improved facilities the Clearfield people are in a strong position to extend the market for their well-known line of pans and other clay plant products.

acute stage, nor has it affected some brick-making concerns as much as others. A large number of concerns are spending considerable money in sending out labor scouts in quest of laborers, and advertising in local and nearby towns for common laborers. In the Urichville district the past years, there has been more or less turmoil because of labor differences, but all is quiet and plants are humming with activity.

The present wage being paid common laborers by brick-makers is 40 cents the hour for day laborers. This is almost equivalent to the wage paid laborers during the war, according to manufacturers. Piece workers also are being paid a very high wage, it was said. Some plants, unable to get laborers, report difficulty in getting out production.

Paving brick manufacturers in this territory are busy and future orders will indicate a period of much activity. In this district many road contracts, some larger than any awarded in recent years, have already been awarded and preliminary work has been started despite the inclement weather. There is every indication that building and construction work will get under way in this district earlier than in former years, as there are many instances where building operations have not been suspended throughout the winter.

BUCKEYE.

AN OLD STORY.

HOW many times must the truth be told before you will believe? Perhaps there is no universal truth in the clay industry. This may account for so much doubt about any subject advocated by any one person. A very learned Doctor of Ceramics gives out a well founded law of action in the clay industry but the listening laymen cry out we are not interested in that, for our clays are different.

Each one seems to have a law of his own about all operations and he begins to teach and preach his own pet theories to others and again the laymen cry out we are not interested for our clays are different.

We have preached and taught certain things in the past, we are teaching the same now and will in the future. Others, more highly educated than we, preached, taught and advocated the same thing before, and even demonstrated the truth of it and still this one thing has not come into general practice even though it has been advocated for more than twenty years. We advocate this thing for **general use** because it is to your financial interest for us to do so and the further fact because it is to our financial interest that we do so.

The thing itself is a principle, a rule of action. It is a plan whereby your Dry Pans or grinding machinery can be made to do more work and better work in a given time. And here is how—don't buy any more screen plates with 1/16-in. or 3/32-in. mesh; don't use anything less than 1/8-in.; and from that up to 1/2-in. will get you the results wanted and most desired. Make the mesh larger in the grinding pans, increase the size of the elevator and increase the size of the screen at the head of the elevator so all the fines may be reclaimed from the material and you will increase your grinding capacity 20 to 30 percent and deliver all the ground material of the same fineness as with Screen Plates less than 1/8-in. mesh.

Another great advantage is in the life and service of the Screen Plates. Those with the larger mesh will grind more tons per hour and last a much greater number of hours than the fine mesh. This is an old story, but it is true, and your clay is not "different," and if you would profit more follow it and believe it, and "if you believe it, it is so."

ITHAMAR.

WESTERN BRICK COMPANY ENTERTAINS REPRESENTATIVES.

MORE THAN 100 DEALERS and representatives of the Western Brick Co., Danville, Ill., were entertained the latter part of February by the company at their annual get-together and banquet held under the direction of Guy Supple, sales manager of the company.

They met early in the morning at the Plaza Hotel from where they were taken on an inspection trip of all of the plants of the company near this city. At noon they returned to the Elks club where a luncheon was served in the grill room. Following the luncheon there was an address by Charles Rainey Bennet, of Chicago.

After the address there was an open forum in which a number of the visitors took part.

ELECTRICAL PROGRESS.

A GOOD DEMONSTRATION of how the industrial world is making progress in the way of using electricity for power purposes is furnished by a report of the U. S. Geographical Survey showing an increase of 24 per cent in the production of electricity in public utility plants in January this year as compared to the same month a year ago. The figures show a

production of 151,900,000 kilowatt-hours per day on the average through January. This means that the production and sale of electric current by central plants will be greater this year than ever before, and it also demonstrates that the industrial world is steadily turning more to electricity to help carry on the work.

LOUISVILLE SCHOOL FOR BRICKLAYERS.

THE LOUISVILLE (Ky.) Board of Education says it is trying to give the public what it wants, so it has established in the vocational school building on First street, between Walnut and Chestnut, a course in bricklaying. The instructor is Charles P. Arnold, and the bricklaying course is one of several being conducted at the school, including electric wiring and some vocational training for girls in various lines. The school in Louisville is modeled after others in Cincinnati, Cleveland, Minneapolis, Indianapolis, and is free as to tuition. The class dates are Monday, Tuesday and Wednesday nights of each week. Professor R. E. Daugherty, who is supervisor of manual training and home economics for the Board of Education, says that he hopes with this school, to help out the shortage in bricklayers, and the effort naturally has the earnest approval of local contractors and material men.

LINCOLN HIGHWAY'S TENTH YEAR.

THAT GREAT CROSS country road, the Lincoln Highway, which is now being characterized as the nation's Main Street, was started in 1913 and will therefore wind up its tenth year in 1923. In a review of the work and progress by A. F. Bement, vice-president of the Lincoln Highway Association we find some interesting facts and figures, among them being the statement that 243 miles of this highway were built in 1922, and that in nine years forty-seven million dollars has been invested in this good work.

Something more than two thirds of this great highway has been properly constructed and it is figured that the total cost of completing it will be around seventy million dollars, which will be money well invested.

The review shows that progress has been made during the past year in every state but Utah, and it is interesting to note that the Hoosier state has followed a consistent program of improvement right along with promise that 1924 will find the work completed from Fort Wayne to Chicago. In 1922 Indiana built twenty-five miles of new concrete pavement on the Lincoln Highway exclusive of a special lesson project known as the ideal section. Indiana spent \$89,790 in the maintenance of 141 miles of Lincoln Highway last year or an average of \$635 a mile. Much of this it is said was spent on the unpaved sections of the route aggregating sixty miles part of which will be paved this year.

There is in this some good argument for paving to reduce upkeep cost, and one of the things the Lincoln Highway is furnishing is opportunity to demonstrate the value of road paving as well as other details of road construction. The construction of last year showed practically fifty-seven miles of concrete and only a little more than fifteen miles of brick paved highway on this route, with over 144 miles of gravel road, and 24.4 of permanent earth grade.

U. S. TREASURY EXPECTS INCREASED RETURNS.

"When it comes to reckoning the receipts of the treasury from the income tax on corporations, the secretary of the treasury puts them at \$375,000,000 on account of 1922, and at \$600,000,000 on account of 1923. So it looks as if, with pencil and paper, the secretary obviously thinks that, whatever the obstacles, we are going to make some real progress in the year which begins on January 1st."—The Nation's Business.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. March 28, 1923. No. 4.

CURRENT COMMENT.

May April shower down with a lot of building.

* * *

It looks a bit like we are peeping around a peak in high prices.

* * *

Now the sunshine should melt down some of the icy hardness of the coal market.

* * *

Wage demands and price increases seem to be off again on one of those vicious cycle things and unless they let up both may be hurt.

* * *

The old wagon still has a tongue, but it is the motor truck that talks loudest with its actions when it comes to that job of delivering bricks to the job.

* * *

The fellow who invented the idea that you can't separate responsibility from authority evidently was not a married man, or else he had not yet found out who is the real boss in this kind of a tie-up where the man assumes responsibility.

* * *

One trouble with our goodness as a people is that most of us intend to be good just as soon as we have made money enough to be comfortable at it, and then we are kept so busy scrambling for the money that we neglect those good intentions and they go to seed.

* * *

The increase in the volume and value of our general imports from other countries shows something of the way they are going to pay off their debts to us, and besides all this there is another item not officially classed or mentioned, but

is referred to in the daily news as rum-running and bootlegging.

* * *

The sun of prosperity is now smiling brightly in the agricultural fields.

* * *

Some of the wage demands of the day are for as much per hour as men used to get for working a day of eleven hours.

* * *

It's a good time for a new crop of those Build with Brick signs that have served so well in the past to help advertise the best building material on earth.

* * *

Some good financial news of the day comes in the form of reports about collections being good and many paying promptly to get the advantage of discounts.

* * *

If those who think our taxes are burdensome were to go live in some other country for awhile they would likely come back home singing a different kind of a song.

* * *

It has been a big year so far in the development of building and loan associations, and these in turn, where properly handled, are proving to be a big thing in helping people to build and own their own homes.

* * *

No matter how many good ideas you may have brought home with you from the conventions, or may have hatched out since yourself, they are not worth a thing to you in a material way till you put them to work.

* * *

In boosting for forest conservation through the use of more clay products and less lumber in building operations the clay-working industry can confess to a selfish interest and still make out a good case before the court of public opinion.

SOME LIVING COST FIGURES.

Figures published coming from the National industrial Conference Board on the cost of living among wage earners' families in this country today as compared with 1914, show an increase of 58.1 per cent. This figure will perhaps come as a surprise to some who have been advocating still higher wages on the ground that living costs are mounting. Wage increases since 1914 amount to considerably more than 58.1 per cent. This is easy enough to understand when we look around and see bricklayers with a schedule of \$1.25 an hour and demands see bricklayers with a schedule of \$1.25 an hour and demands building industries making similar demands. Indeed all the way along the line from the skilled worker down to the common laborer, wage rates today in comparison with 1914, will show advances well above 100 per cent. In the face of this we have official figures which indicate that the advance in the cost of living has not been more than half the advance in wages.

SALARY ARGUMENTS.

The winter season of conventions in many lines of trade and industry brought out in connection with cost records and discussions, some interesting arguments about salaries. Among some of the incorporated business institutions there has been a noticeable disposition to be liberal in salaries, partly because there is some escape from profit taxes in this. On the other hand there is another line of argument with more sound reason behind it, of limiting salaries especially, in partnership operations so as to keep from burdening the business with cost, and on the theory that the profit would

be divided fairly among the partners anyway. Out of it all comes the impression that there has perhaps been an inclination toward too much liberality in salaries to active officials of incorporated concerns, and that the safer ground is that on which some of the partnership concerns take their stand, that of limiting salaries to a rational minimum and dividing profits each year according to the earnings of the business. There will always be difference of opinion and arguments as to salaries, especially where high salaries are involved for executives, but there is not much in the way of sound reasoning in the idea of yielding to the arguments for higher salaries because it helps evade profit taxes. Mixing salaries up with tax evasion is not good business, neither is it the right brand of loyalty to the country.

WHAT TAXES TEACH US.

The many puzzling questionnaires furnished us for making out personal income taxes and for corporation partnership reports together with the rulings by the Internal Revenue Department have taught us several things as well as impressed the importance of thorough standard and preferable uniform bookkeeping. It has helped, for example, to establish some positive limits in the matter of depreciation charges on buildings, equipment and delivery trucks, and a lot of items which in the past we were quite vague and uncertain about. The government agents have of necessity had to set up some positive rulings here on many different questions and angles and out of this all we are getting some information that should help out considerably in regulating and standardizing practices in the matter of inventory, depreciation and other proper items to be entered on the debit side in striking the annual business balance. So while there has been much worry and exercise of gray matter involved, as well as taxes to pay, there are compensations in that all this is teaching us something worth while about how to maintain records of our business affairs.

THE ROOFING FIELD.

A recent compilation of figures on the production of roofing materials shows that in 1921 the production of composition roofing was twenty-eight million squares, while the production of shingles in the United States and British Columbia was eight and three-quarter million squares. This suggests that the roofing requirements of the country are somewhere close to forty million squares a year. And it is a reminder that those canvassing the industry did not think enough of burned clay tile, slate, and cement tile to give it a listing. Neither was there a listing of metal roofing, probably partly because it is not easy to get data on the volume of this consumed in the roofing trade annually.

There have been some interesting changes going on in the roofing industry the past few years. Composition roofing has cut into the old metal roofing trade perhaps fully as much as it has cut into the wooden shingle trade and it is this which has helped to swell so rapidly the volume of production and use of what is known as composition roofing. Since the war the copper people have been concerned about developing new trade fields for copper and out of this is coming quite a drive for sheet copper in roofing, guttering and spouting, with some prospects that this may come to be the greatest roofing material in the country unless meantime the clayworkers get busy and develop a keener interest in and a wider use of burned clay roofing tile.

There is a big field of possibilities for roofing. So far, burned clay tile has been regarded as the best possible roofing material, but it has not been available at competitive

prices and in quantities which might be desired. Now there is a question of whether the clayworking industry will get busy and develop a wider production and use of roofing tile, or whether they will delay until the copper people cultivate the field and make copper shingles and sheet copper the big factors in the future where people are seeking for a permanent roofing. If clay roofing tile is to play an important part in the roofing business of the future it is time for those interested in the future welfare of this industry to be up and doing.

THE GROUND FLOOR AND BRICK VENEER.

There are two things about the modern home of peculiar interest to the clayworking industry right now. One is brick veneer on the frame wall, and the other is the ground floor in the average home.

Taking the ground floor first, the big idea, which is a matter of more concern to the hollow tile people than anyone else, is to encourage the idea of building the basement and ground floor of the modern home fire-proof. When we can get this, have a fire-proof first floor over the furnace, a good start has been made toward thoroughly fire-proofing the home. And the cost of doing this is comparatively small where there is a basement with masonry walls, so this idea is recommended as one which the hollow building tile people should be giving active attention to.

And the hollow building tile people as well as the brick men, have an interest in this matter of brick veneer. At the French Lick convention a live dealer asked the writer what could be done to induce people to use hollow building tile instead of framing when they wanted a home with a veneer face brick.

This question brought to mind an interesting discussion which took place between two brick men. One was lamenting the fact that so many people were building homes of frame construction and using only a veneer of brick on the outside instead of making solid walls. This he considered poor policy for the builder as well as only half a loaf for the clayworking industry.

The other brick man took a more interesting and optimistic view of the brick veneer proposition. He said for home builders to look favorably upon and take up with using brick veneer was simply taking the first step toward a general use of clay products in home construction in the future. He said he had faith in the idea that if this year a lot of people built homes with brick veneer on the outside, next year others would go a little further and build solid brick walls, or build brick veneer with hollow tile walls. In a word, he felt that brick veneer was figuratively a stepping stone to real progress in the use of brick and hollow building tile for home building purposes.

That is why the subject of veneer and the ground floor has been linked together here, both mark the starting points in progress toward better things and more of the element of fire-proofing in the home.

WHY IS A STOCK DIVIDEND.

The Service Bulletin of the National Association of Manufacturers features an editorial quotation from the Farm Journal with the evident purpose of using it in the form of proper reply to Congressional Critics of stock dividends to escape income and surplus taxes on the part of corporations. In the editorial quoted it is pointed out that a corporation surplus is the undivided profit of the past years and when it is turned into stock neither the corporation, the stockholder, the farmer, the workmen, the senate, the treasurer, or anyone

else whatsoever is one cent better off or worse off for the declaring of these dividends, and the terrible outcry about them is pure bunk. For Goodness' Sake! Then why is a stock dividend? If no taxes are saved and nothing is produced beneficial to anybody, anywhere, at any time, then what excuse on earth is there for that thing called a stock dividend?

STEADYING THE SHIP OF FINANCE.

While there is still a lot to be done before international finances are stabilized on a thoroughly satisfactory basis. Still the most important step along this line was made when our own government and the government of Great Britain decided on a basis of settlement or adjustment of more than four and a half billion due this country from England. This is hailed as the first step toward world solvency and it will certainly steady the ship of world's finance, and it should lead the way to the final adjustment of all international finances and a restoring of the world as a whole to a rational and normal financial footing once more.

FIRE LOSSES AND CAUSES.

While figures are not yet available for 1922, the National Board of Fire Underwriters estimate the loss of 1921 was \$495,406,012. Among the more important causes listed are those of matches and smoking, spontaneous combustion, defective chimneys, stove pipes, electric sparks on roofs. All these causes have charged to them losses running above ten million, with matches and smoking heading the list with nearly twenty-six million dollars a year. Every brick manufacturer should keep on tap these figures of annual fire losses and make use of them in connection with the slogan to build with brick.

GET BUSY ON THIS.

There are some signs that unless the brick manufacturers get together and use their good offices there may be during the year a killing off of the goose that is laying the golden eggs in the building work this spring. Not only were there recent reports from New York that bricklayers and other skilled workers who are getting schedule wages around \$1.25 an hour, are talking of and threatening to demand something like double this amount, but from many other cities throughout the country come reports of bricklayers, plasterers and other skilled workers claiming and getting a premium above the agreed schedules which already seemingly were high enough. We hear of premiums being paid all the way from 10 percent up to 50 percent above the regular scale, and out of this seems to be growing a sort of reckless profiteering idea, which if pursued far enough, will result in putting a sudden stop to building operations before we are well on the way into the new building season.

Illustrative of this, a man who was planning a new brick addition to his factory in a city where labor conditions are usually very favorable, said that while the union scale for bricklayers is \$1.25 an hour, that bricklayers were actually requiring \$1.75 an hour before they could be induced to take on new jobs. This and similar instances are plain cases of greed running wild. It seems that the fact that builders were being kept busy all winter, instead of generating a feeling of appreciation, has begotten a spirit of greed and a feeling that if they are in urgent demand all winter that the demand will be so strenuous during the spring and summer that they can get anywhere from 50 to 100 percent increase in wages. Mean-time extra wage demands among workers at producing plants have increased the cost of brick itself, and all of it doubled

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together means, if not checked, that building cost will mount so high that the history of 1920 will repeat itself and we will have another buyers' strike and a let-up in building operations. In a word, it will be a killing off of the goose that is laying the golden eggs of prosperity in the building industry today.

It is a time for brick manufacturers in the interest of their own business and its future welfare to get busy. To call upon and talk to contractors, bricklayers and others concerned and try to get them into a more rational frame of mind. It is to their interest as well as the interest of brick manufacturers to help promote the use of brick and to develop brick and hollow building tile as bigger factors in the building of the future. Not only will they fall short in efforts of this kind if costs are increased to an unreasonably high level, but the final upshot will be to put a check on building operations which it may take a year for us to get over. It is a time for well-balanced men of good judgment to go into action and make a plea for reason among bricklayers and others concerned to the end that we may have a continuation of our building prosperity right through the year.

RUNNING FULL TIME AT BUCYRUS.

The Hadfield-Penfield Company, Bucyrus, Ohio, with the promptness and dispatch which characterizes everything that company does, has completed the repairs made necessary by the fire which damaged their foundry the latter part of January and the plant is running to capacity to keep up with orders.

Every brick man should be a member of his local association, and then on through and include state and national organizations, for it takes all these to properly round out association activities and each manufacturer's duties to his fellow workers.

Automatic

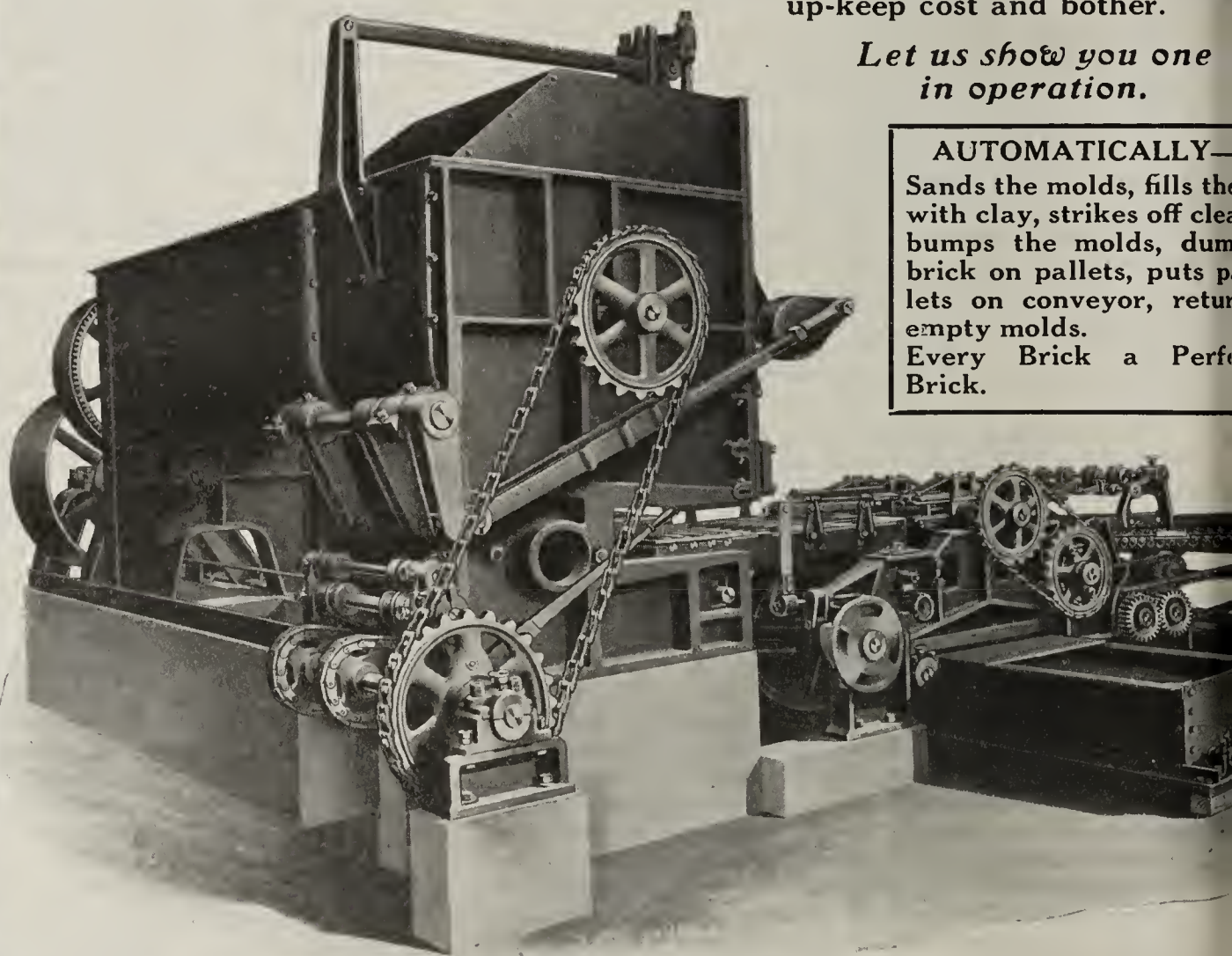
American
Line

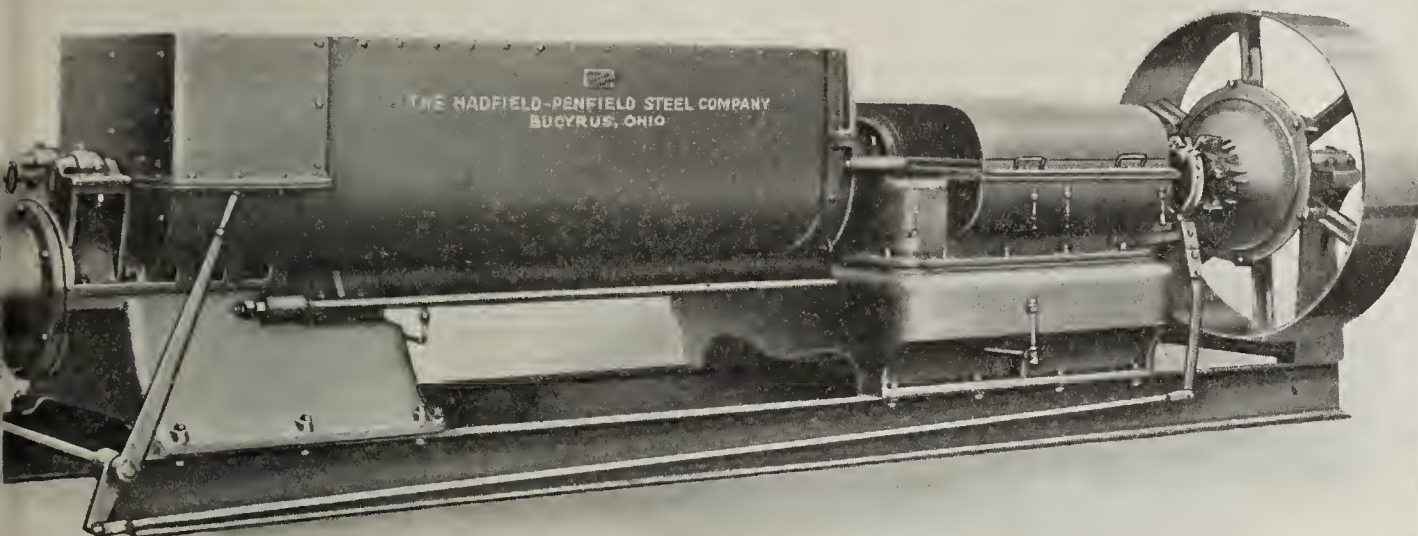
It's Automatic From Dawn to Dark and starts at it again next morning without Priming or Pestering. It's a long way in advance of similar machinery and is built to maintain its successful operation. Users like it. Employees like it. If you make Soft Mud Brick this machine will give you an advantageous lead in Quality and Quantity of Superior Brick and at much less cost of labor, up-keep cost and bother.

*Let us show you one
in operation.*

AUTOMATICALLY—

Sands the molds, fills the molds with clay, strikes off clean bricks, bumps the molds, dumps the bricks on pallets, puts the pallets on conveyor, returns the empty molds. Every Brick a Perfect Brick.





Combined

The "American" No. 404 Combined Machine Co-ordinates two superior American Machines—the No. 233 Auger Machine and the No. 384 Pug Mill double. It is well built in every detail. The double shaft pug mill insures ample pugging and an ample supply of clay. Battle Ax type of pugging knives overlap each other and, in turn, overlap the rear augers of the expression section, insuring ample and steady flow of clay.

Ample Shafts, Bearings and Gears.

*Gearing run in oil in dust proof housing.
Complete description on request.*

Manganese Steel Repair Parts

Last
Longer and
Cheaper
in the
Long Run

MANGANESE



STEEL

THE HADFIELD-PENFIELD STEEL COMPANY
BUCYRUS, OHIO

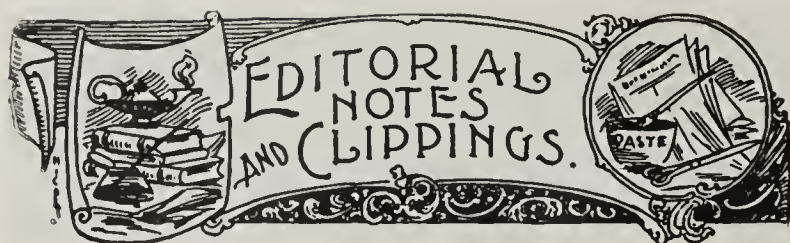
WE MAKE
THEM

THE "AMERICAN LINE"

Built by

The Hadfield-Penfield Steel Co.

Bucyrus, Ohio



The Hazard Brick Co. has been organized at Hazard, Ky., by H. C. Powell, K. F. Stutz and J. W. Craft.

L. A. Ballenby has announced that he is interested in organizing a company at Norton, Va., for the manufacture of brick.

The plant of the Auburn Shale Brick Co., of Auburn, Pa., is closed down for the purpose of making extensive repairs and improvements.

John Waddell and W. C. Kelly have purchased the plant of the Union City, Tenn., tile factory, from R. M. Whipple, who has owned and operated same for thirty years.

The Winston Brick Company has been incorporated at Winston-Salem, N. C. J. C. Williamson, Spencer Trent and E. W. R. Harris are the principal incorporators.

A new brick plant, equipped with modern machinery, is to be built in Casper, Wyo. The plant will manufacture common, face brick and fire brick. Otto Boyer is connected with the new institution.

The Ceramic Tile Company of 366 East Sixty-ninth street, Chicago, has been incorporated with a capital of \$2,500. The company will manufacture and deal in mosaics and tile. The incorporators are W. R. Turner, John B. Clonan and T. K. Stoner.

The American Brick Corporation of Suffolk, Va., of which R. L. Jacobs is president and Lewis G. Brothers, secretary, has awarded the contract for the erection of a plant with a daily output of about 30,000 brick. The cost of the building and machinery will be about \$30,000.

Incorporation papers have been filed by the Ritter Brick Company of Chicago, Ill., with headquarters at 111 West Jackson Boulevard. Rudolph Ritter, Stephen E. McCann, Jr. and E. J. Enzenbacher are interested in the company which will manufacture and deal in brick and other building materials.

The Harbison-Walker Refractories of Pennsylvania, with a capital of \$30,000,000, has filed articles of incorporation in Missouri with a capital of \$50,000 and with headquarters at Montgomery City, Mo. The incorporators are J. C. Billy, N. B. Myer and S. M. Langdon. The company will manufacture fire brick and refractory materials.

The Big Stone Gap Brick and Tile Company, Big Stone Gap, Va., has been granted a charter to do business. The concern is capitalized at \$100,000. The land, with shale enough to last for many years, has been acquired by the brick people from the Big Stone Gap Land Company. The officers are W. W. Taylor, president; I. C. Taylor, secretary; J. M. Goodloe and R. T. Irvine, all of Big Stone Gap.

S. W. Smith, president of the Richmond Brick Co., San Francisco, Cal., wrote us recently that the outlook for the year is very good. They have started deliveries on a number of large contract orders they have had on hand for some time. They have found it necessary to make a number of improvements to their plant, including three new kilns, a new dry press brick machine and adding several tunnels to their dryer. The company gets \$15.00 for common brick, \$33.50 for face brick.

The Springfield Brick Company has been incorporated with a capital of \$97,500. The incorporators are Clayton H. Goodell, Harold E. Clark and Harry G. Fisk, of Springfield, Mass. The new company was formed to take over the interests of a company of the same name which has been in business there for many years and has operated two brick yards, one on Carew street and the other just east of Forest park. The recent death of R. A. Bailey, treasurer and manager of the old company, necessitated a reorganization. First the capital was increased from \$50,000 to \$97,500. Then new officers were elected as follows: President, Mr. Goodell; treasurer and manager, Mr. Clark; directors, those two and Mr. Fisk. No enlargement of the brick plants is in contemplation.

The Acme Brick Company of Breckenridge, Tex., will construct a brick plant, Jack B. Robert of that company, has announced.

W. S. Morrison of the Riverside Brick and Manufacturing Company at Hattiesburg, Miss., has announced that the company will increase its capital stock to \$50,000.

The Continental Brick & Tile Company will build an up-to-date plant at Belmont, N. C., with 50,000 daily capacity. They will manufacture both face and common brick and hollow tile.

The Meadow Brick Company has been incorporated at Four Oaks, N. C., with a capital of \$25,000 and with the following incorporators: R. B. Strickland, J. W. Sanders and D. H. Sanders.

W. P. West, who has been associated with the Franklin Brick & Tile Co., of Columbus, Ohio, has resigned and will take charge of the sales department of the Moores-Coney Co., dealers in brick and other building supplies in Cincinnati.

The W. J. Hammett Company, of 15 East Fayette street, Baltimore, Md., has been incorporated with a capital stock of \$10,000 and will manufacture hollow tile, brick, etc. The incorporators are William J. Hammett, Emil Stolze and Dorothy Klein.

The Vitrified Products Corporation, with headquarters at San Diego, Cal., will construct an immense plant at Old Town, Cal., for the manufacture of high grade brick, drain and roofing tile, and other clay products. Victor Kremer is president of the company.

C. F. Smith, formerly superintendent of the Fulton Fire Brick Company at Fulton, Mo., and more recently with the A. P. Green Fire Brick Company at Mexico, Mo., expects to leave Mexico the first of March to become superintendent of a brick plant at Ironton, O.

Henry Bier, Joseph Curtis, and George Brown have purchased from the Staniforth heirs the plant of the Gainesville (Texas) Brick Co., and will put same in condition to manufacture 40,000 brick per day. The shale deposits belonging to the company are said to be the equal of any in Texas, and the supply is practically inexhaustible.

The Continental Brick and Tile Company of Belmont, N. C., has been incorporated with a capital stock of \$50,000 and with J. G. Gullick as president, has under construction a plant with a daily capacity of from 30,000 to 40,000 face brick a day. The company will have its temporary address at Chapel Hill, N. C. It is probable that the plant will be enlarged next year.

The Bacon Hill Brick Company has been incorporated in Elkton, Md., with James F. Evans, of Elkton, John Mattiuse and Camelo D. Avazio, of Philadelphia as incorporators. The capital stock of the new concern is placed at \$80,000. They will engage in manufacturing all kinds of building bricks at Bacon Hill and will give employment to about 35 men.

The Poston Brick Co., Springfield, Ill., look forward to a very busy season. They recently completed a large contract in New York for their variegated Pos-Tex Brick amounting to over \$100,000, and have under way a similar contract, turning out 80,000 brick per day, but if the demand for their Pos-Tex fence brick keeps on at the present rate, they will soon have to increase the capacity in the very near future.

Cyrus Borgner, one of the pioneer fire brick manufacturers of the East, died at his home in Philadelphia, Pa., February 20th, after an illness extending over three years, during which time he had ceased to take any active part in the conduct of his business. For many years his firm was known as the Cyrus Borgner Company, but last November the company was reorganized under the firm name of the Camden Fire Brick Company, with headquarters at Camden, N. J.

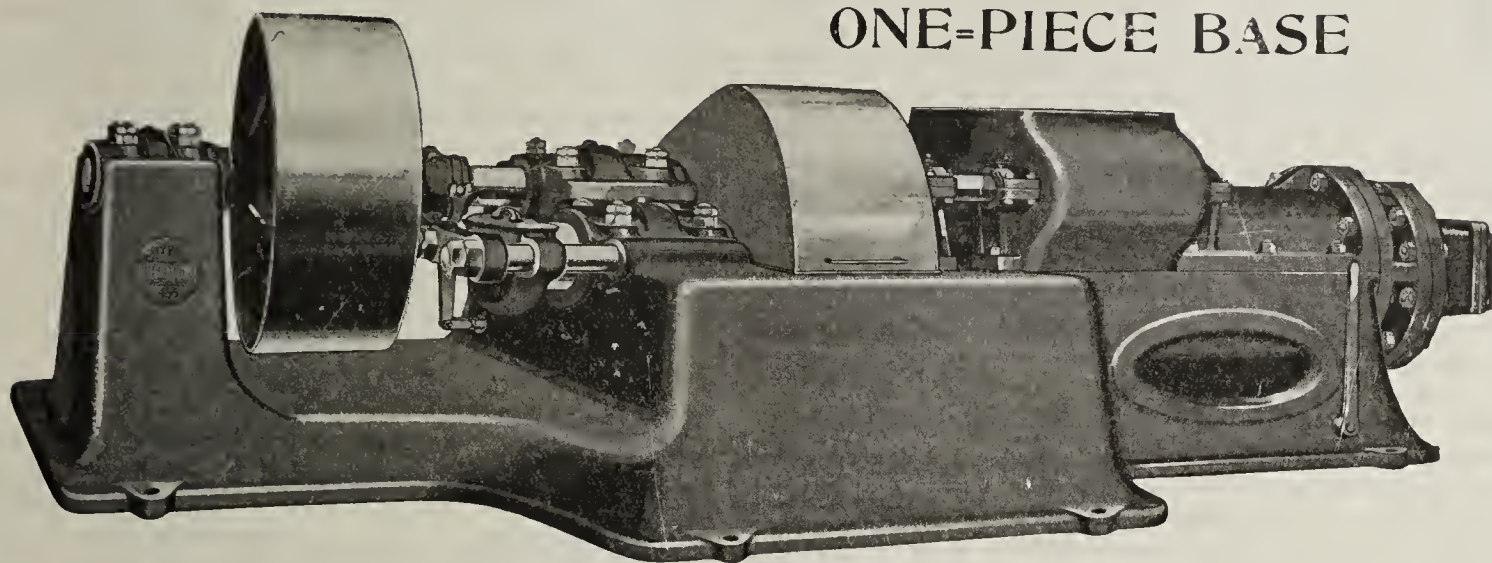
A. P. Green, president of the A. P. Green Fire Brick Company of Mexico, Mo., who recently gave a substantial amount to the fund that was to be paid to Mayor J. W. Gallaher, of Mexico, as a bonus for building sixty new homes in that city, and who announced that he would build some homes also if the project went through, has purchased several lots in a good part of that town and will soon begin the erection of several modern buildings. The fund of \$15,000 to be paid Gallaher has been raised and he will go ahead with his program to build the sixty residences.

AUGER MACHINES

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Ask for Bulletin No. 30

DRYERS

METALLIC RADIATION



"More Radiation per foot of Tunnel."

Ask for Bulletin No. 40

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Mention THE CLAY-WORKER

PACIFIC COAST NEWS.



O BE, OR NOT TO BE," has been the question as to Market street, San Francisco, the Broadway of the West. The western business world has become interested in seeing this great thoroughfare, extending from the eastern entrance of the city at the state-owned ferry building back several miles to the Twin Peaks become a continuous tunnel of skyscrapers housing the big business of the city. But about half way up, and well beyond the present business center, was located a few years ago the great civic center, where the City Hall, the Exposition Auditorium, the city library, etc., are grouped around a beautiful park. And as this center does not quite reach to Market, the lovers of the artistic have sought to keep the view open from the great thoroughfare. So the proposition to erect a \$3,000,000 sixteen-story hotel intercepting the view from Market precipitated a tug of war between the advocates of "Our City Beautiful" and the champions of an unbroken Market street; and the city authorities promptly filed condemnation proceedings on the proposed site. By a compromise the main street to the civic center passing the new hotel will be widened twenty feet, and the hotel will rise two to four stories higher. As soon as the settlement was made a number of new business blocks were announced on upper Market. The new wing of the Whitcomb, across from the civic center, a million dollar addition, is starting. All this building already projected for upper Market, and being hastened by the prohibitive rents in the downtown section, guarantees a heavy building program for the next six months. The demand for terra cotta and face brick will be enormous.

That there is room for a great expansion in the use of hollow tile and brick in the construction of ordinary buildings and dwellings is becoming more evident every day. And E. A. Dixon, secretary of the Common Brick Association of San Francisco, has a great quantity of the literature prepared by the national association, which he is getting into circulation. He is giving first attention to the architects. It is surprising, he says, how many of them never give a thought to the use of brick, assuming that a brick structure is necessarily much more expensive, whereas the truth remains that the saving on insurance and repairs soon pays back the little additional first cost.

The Steiger plant at Vallejo is busy filling an order for 100,000 tile for the California Palace of the Legion of Honor being constructed in Lincoln Park, San Francisco. The orders of the company are steadily increasing and enlargement in the near future seems probable.

The Homer Knowles Pottery Company of Santa Clara has reorganized management and elected directors for the coming year. Homer Knowles announces that in a short time all departments of the factory will be running to capacity. The manufacture of dishes and pottery in some departments has already begun.

The Pioneer Brick and Tile Company, of Fresno, on the 15th of January, re-elected its entire board of directors and officers. The officers re-elected are P. W. Hastie, president; J. W. Fewell, vice-president. These, with Charles W. Barrett, E. B. Walthall and C. C. Ryland, constitute the board of directors.

Fresno, the metropolis of the San Joaquin valley, has been doing a wonderful stunt in building during the past few months, and prospects are good for keeping right along. One of the industries that has been developing is the manufacture of common brick. During the past year the output was about

15,000,000, valued at the yards at more than a quarter of a million dollars. Fresno has two brick companies, the Craycroft Brick Company and the Pioneer Brick and Tile Company. The Craycroft company has sixty acres of clay about a mile west of the city and eighty more at Mercer, enough to last them for about forty years. The Pioneer plant has eighty acres some three miles east of the city, with clay enough for about thirty years. Within the Fresno building district at Exeter is also the S. P. Brick Company's plant, owned by H. W. Shields, of Fresno, and W. D. Trehwitt, of Hanford. While Fresno thus supplies all its own needs for common brick, all pressed face brick has to be shipped in from Los Angeles or the bay region. There would seem to be room for further development at Fresno.

The Bakersfield Sandstone Brick Company now turns out about 5,000,000 brick per year. It is the largest in the county, and has supplied most of the brick in use there. This company was founded thirty-five years ago by James Curran, the son of an Illinois brickmaker, who had come to try his fortunes in the West. Seeing the need of brick there, Mr. Curran secured a piece of clay near the city and began in a small way to supply the need. His firing had to be done with wood, entailing considerable labor and expense. Today natural gas furnishes tongues of flame carried by steam into hearts of the brick kilns, and in a week or less a fine product is ready for the market. For Bakersfield has been one of the centers of the oil industry, and natural gas is abundant. So the humble beginning has developed into a strictly up-to-date plant with modern machinery. Sometimes from their clay they get very beautiful colors, but nature seemed to be whimsical when she laid away these deposits, so they are liable to discover almost any color when the kilns are opened. C. S. Curran, A. H. Curran and Roland Curran are now associated with their father in the business. Another son, Hugh, is studying in the College of Ceramics in the University of Ohio, preparatory to joining the firm. And the fifth son, Robert, when not needed at the Kern County High School, takes his turn in the yard like any other employe.

An interesting relic in the brick line is a brick-with-straw, in the possession of James Curran, of Bakersfield. It is a brick block from one of the buildings around old Fort Tejon, nearly a century old. It is, of course, sun-baked, and demonstrates the longevity of these materials under proper conditions.

SUNSET.

JUSTICE CLAY PRODUCTS DRYERS ARE POPULAR.

The Pittsburg Paving Brick Co., Pittsburg, Kansas, is converting a twenty track waste heat dryer into a Justice Radiated Heat Dryer with a full metal radiation system.

The Des Moines Brick & Tile Co., Des Moines, Iowa, have wrecked their old steam dryer and are installing a Justice twelve track Radiated Heat Dryer for drying building tile.

The National Fireproofing Co., at their Haydenville, Ohio, plant, are installing a six track Justice Radiated Heat Dryer. In this plant they have had a Justice dryer of twenty-two tracks for the past eight years.

The West Virginia Brick Co., Charleston, West Va., are also installing a ten track and metal combination Justice Radiated Heat Dryer in their works to make it modern, efficient and up-to-date.

Justice Dryers are a product of the Manufacturers Equipment Co., Dayton, Ohio. This company will appreciate any inquiries for new dryer installations or for the rebuilding of your old ones, either in Radiated Heat or Waste Heat Dryers.

These dryers are well and favorably known everywhere in the industry and are noted for their great economy in operation. The service rendered by the selling company to purchasers of these dryers is without a parallel.

Reduce Your Burning Costs

We have positive proof that—

One of our kilns is equal in durability to two average kilns.

That two of our kilns in operation will produce as much ware as *three* average periodical kilns, and that this saves first cost at the rate of 33 1-3% for your kilns on a CAPACITY BASIS.

Reduce Your Burning Costs

We have positive proof that—

We can dry and burn the ware with less than half the fuel required for average periodical kiln operation.

That our system delivers the goods.—It lasts—stays put—is easy to build and operate—and means more than a “*saving in Burning Costs.*”

Reduce Your Burning Costs

We Can Refer You—

To many satisfied users on whose plants you can see for yourself how economical and serviceable in every way is the MINTER SYSTEM.

Write for complete details and plants using our system.

THE MINTER SYSTEM

—200 lbs. coal per ton of ware—

Albany = GEORGIA = Columbus

The Backbone of Economy



Note the Schofield-Burkett Excavator loading itself with clay to make brick. Can gather its load in distance of 10 feet.

Highly Recommends Schofield-Burkett Excavator

"We would be pleased to give any recommendation possible to any prospective purchasers of the Schofield-Burkett Excavator, and are much pleased to give a very satisfactory report as to the operation and stability of the equipment which we have now used for several years.

"Previous to making purchase of this Excavator we had been troubled considerably with the problem of cost in regard to excavating, but are now satisfied that there could be no better operation at minimum cost."

Yours very truly,

WYOMING VALLEY BRICK CO.

(Signed) H. L. Curtis.

Wilkes-Barre, Pa.

A Few of Our Many Satisfied Users Are:

Cleveland Builders Supply and Brick Co....Cleveland, Ohio
Georgia Vitrified Brick and Clay Co.....Augusta, Ga.
Southern Clay Manufacturing Co.....Chattanooga, Tenn.
Rose Brothers Brick Co.....Kingston, N. Y.
Huntsville Brick Co.....Huntsville, Ala.
St. Joseph Pressed Brick Co.....St. Joseph, Mo.
Sutton & Suderley Brick Co.....Coeymans, N. Y.

Let Us Tell You More About It.

The Schofield-Burkett Construction Co.

A. J. ALSDORF CORPORATION
404 So. Wells Street, Chicago
Representatives in Ill., Mich. and Ind.
and Exclusive Foreign Distributors.

Macon,
Ga.

STANDARDIZED COSTS FOR CLAYWORKERS.

(continued from page 345)

mine just what share each order passing through the foreman's hands should take.

There is the general labor. This is the class of work that cannot be charged directly. Trying to determine the time spent on each kiln would be nothing more than a guess and would be actually useless for cost keeping purposes. It is better to treat this class of help as indirect expense. Then there is the labor and material necessary to keep the equipment in a good state of repair. It would be impossible to determine what damage each lot causes, and this cost has to be treated as indirect expense.

Then come the heat, light, and power bills. The coal used for heating the plant would have to be charged to this group. The electric current for light and power, also fall into this classification. The electric current that is used to furnish the motive power would have to be charged to this element of cost. No stretch of imagination could possibly exclude the above items from the cost. Still some men persist in figuring overhead and profit together without any attempt to determine the true extent of the overhead.

The cost of maintaining a truck, the repairs on it, the salary of the driver, the gasoline used, all have to come out of the overhead. Personal property and income taxes have to be covered by the overhead. Depreciation, stock insurance, and such general expenses as are too small to itemize have to be cared for in the same way. The above items have to do with the plant only. Besides this group, there is another set of expenses known as the administrative and selling expenses which have to be charged to the overhead.

Administrative and Selling Expenses.

Administrative and selling expenses cover that part of the overhead which is incurred in getting additional business and negotiating with firms and builders. They include purchasing material, caring for the general books, and transacting all the commercial and financial work of the business. In the first place, there is the salary of the president and that of executive assistants he might have which have to be charged to this account. The wages of the bookkeeper must also be paid from this portion of the overhead. Any charitable donations or extra bonuses to the employees must be accounted for. Stationery, association dues, telephone bills, traveling and incidental expenses, professional services, advertising and miscellaneous items all must be paid out of the overhead. The above presents a rather formidable list and to omit any or all of them from the estimated cost of a job is the height of folly.

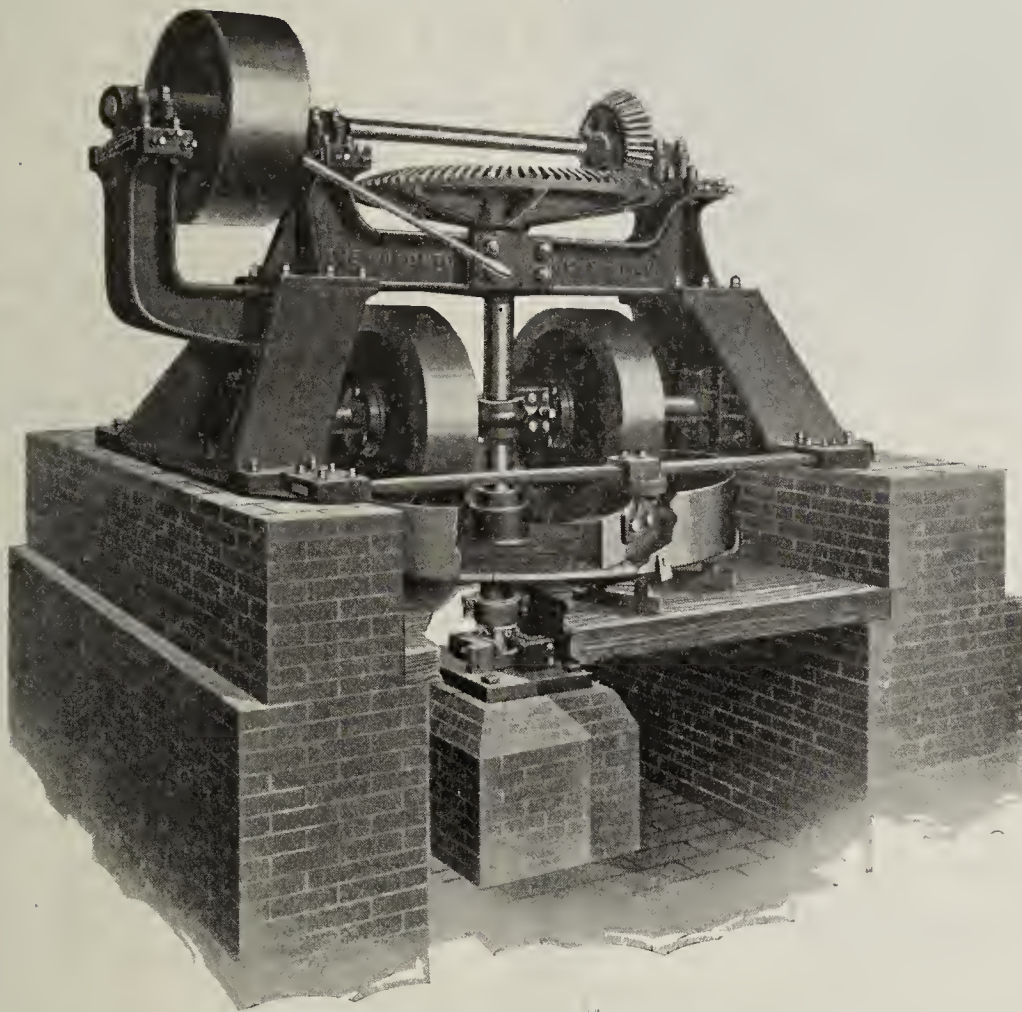
The Manufacturing Cost.

In order to determine the manufacturing cost it is necessary to add the cost of the clay to the cost of labor and the indirect expenses. It must be borne in mind at this point, that the amount of overhead charged to a lot in any period is not necessarily the actual overhead cost for that period. For example, suppose you rent a building for \$100.00 per week and your earnings in that building are only \$75.00 per week. You have two ways open in which to make up this deficiency. One is to earn more money and the other is to take the money out of your pocket to pay the difference. If you are in a position to earn more well and good; but if not you will have to make it up yourself or give up working.

The same is true with overhead. If your overhead is \$100.00 per week, and at the normal rate of work you have earned only \$75.00 per week, you cannot make up the difference by raising your price because your overhead earnings

(continued on page 394)

**THE NAME
TORONTO
ON A DRY PAN
MEANS
A BETTER PAN FOR THE
MONEY**



TYPE 'B' 10FT. DRY PAN

We will see you at the convention again next year.
In the meantime send us your inquiries.

**THE TORONTO FOUNDRY & MACHINE CO.
TORONTO, OHIO**

Mention *THE CLAY-WORKER*.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

STANDARDIZED COSTS FOR CLAYWORKERS.

(continued from page 392)

drop when business drops and the only effect of raising your price would be to lose more revenue. The thing to do, then, is to pay this difference out of your pocket. Now if you will determine your overhead, figure scientifically and estimate it properly in your costs you will be able to earn more overhead than you need in good times so that you can use this excess amount in dull times to tide you over.

The Selling Price.

The manufacturing costs consist of material costs, labor costs, and overhead. The next step is to develop the selling price. The selling price consists of the manufacturing costs, plus that part of the overhead which is used in selling and supervising, and the profits. The manufacturing costs and the selling and administrative expenses are a matter for scientific determination. If your costs records are in good shape it is not necessary to guess at them. The profits are determined by your business skill and experience. It would be unwise to set up any definite percentage for profit. Profit should be based on what the traffic will bear. If prices are rising you are entitled to as much as you can get for your brick or clay product because when prices drop you will have to lower your price to suit the market.

The Way to Figure Profit.

But a man often makes an error in adding his profit. He determines what he ought to get by way of profit from the total volume of business. Usually this is expressed in the form of a definite percentage, say 15 per cent of all the sales. But when it comes to estimating the work, the percentage is based on the cost of production and not on the price of a job. A concrete example is given below:

The annual volume of business is \$100,000. This splits up as follows:

Labor	\$ 30,000.00
Material	25,000.00
Overhead	25,000.00
Total Cost	\$ 80,000.00
Profit	20,000.00

Gross Business\$100,000.00

The profit is 20 per cent of the Gross Business:

20%

\$100,000) \$20,000.00

But it is 25 per cent of the cost

25%

\$80,000) \$20,000.00

Therefore the correct way to calculate the cost of a lot of bricks would be as follows:

Labor	\$ 600.00
Material	500.00
Overhead	500.00
Total Cost	\$1,600.00
For Profit	.25
Profit	\$ 400.00
Cost	1,600.00
Price	\$2,000.00

Unless a man figures in this way, he cheats himself.

(To be continued.)



IF THEY DID! BUT THEY DON'T!

If Brick Moulds only grew on trees, the question of supply and demand at the very last moment would be greatly simplified.

Good moulds help make good brick and it takes time to make good moulds.

It is our policy to make only the very best moulds that can be turned out. For this reason it is our desire that you let us have your orders as soon as possible so that you will have them at the very beginning of your busiest peak period—when you need moulds as you never needed them before.

The coming season looks like one of the largest in the brick industry and certainly every manufacturer will want his equipment up to the very highest point.

Your order received now will have our very best and most careful attention—and you will have them on hand and not be worrying when the **grand rush** begins.

LANCASTER IRON WORKS, Inc.
Lancaster, Penna.

Brick Machinery Department

James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick Plants for
the Manufacture of Brick by the Soft Mud Process.

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

MIXING BRICK WITH IMAGINATION.

(continued from page 343)

It's much like choosing wall paper. One often likes the small sample, but the whole room papered is not as satisfactory."

Daphne looked thoughtful and pretty, and amazingly in earnest.

"Haven't they a small room down at the office that they would give you for demonstration purposes?" she wanted to know. "It would only need to be a few feet square."

"There's a room about ten by twelve feet," Tom recalled, a bit surprised that he had never thought of it before. "It's been used as something of a catch-all. It's an inside room, but it has a skylight."

"Just the thing," declared Daphne enthusiastically. "Now this is what I thought might be a good plan, Tom. Fill that room with shelves wide enough apart to permit you to display about three courses of brick piled on each shelf. Instead of mortar you would use narrow strips of wood painted the right color. It would make it easy to arrange and change the brick display."

"Then," Daphne pointed out carefully, "people would get an actual idea of how the brick wall would look. One or two bricks of that Inco brick fails to give a customer any idea of the wonderful possibilities of shades and colorings in a whole wall built up of that material. You have to see it in some quantity to really appreciate that it is higher priced, because it is lovelier and allows one to get away from the flat one-colored hard look of the ordinary brick wall."

Tom began to look really interested.

"Instead of selling your customers from two or three loose bricks," suggested Daphne, "sell them from piled up wall samples, with the wooden painted slats showing them the possibilities of various combinations of brick and colored mortar. In other words, give a real selling demonstration."

Tom Mackey nodded. The idea was assuming a decidedly practical slant.

"It seems to me, Tom, that in selling building supplies in which the idea of color or style or beauty enters, it is well to create an exhibit that shall be as nearly comparable as possible to the conditions or circumstances in which those building supplies will be used."

Daphne hesitated, fearing to offend her husband.

"Don't you suppose, dearest, that you have been too busy selling just a hundred or a hundred thousand brick to get the right view of your job? Now take Mrs. Chichester's two fireplaces that she didn't like when they were completed. Don't you suppose it was because she did not choose the right color for her rooms?"

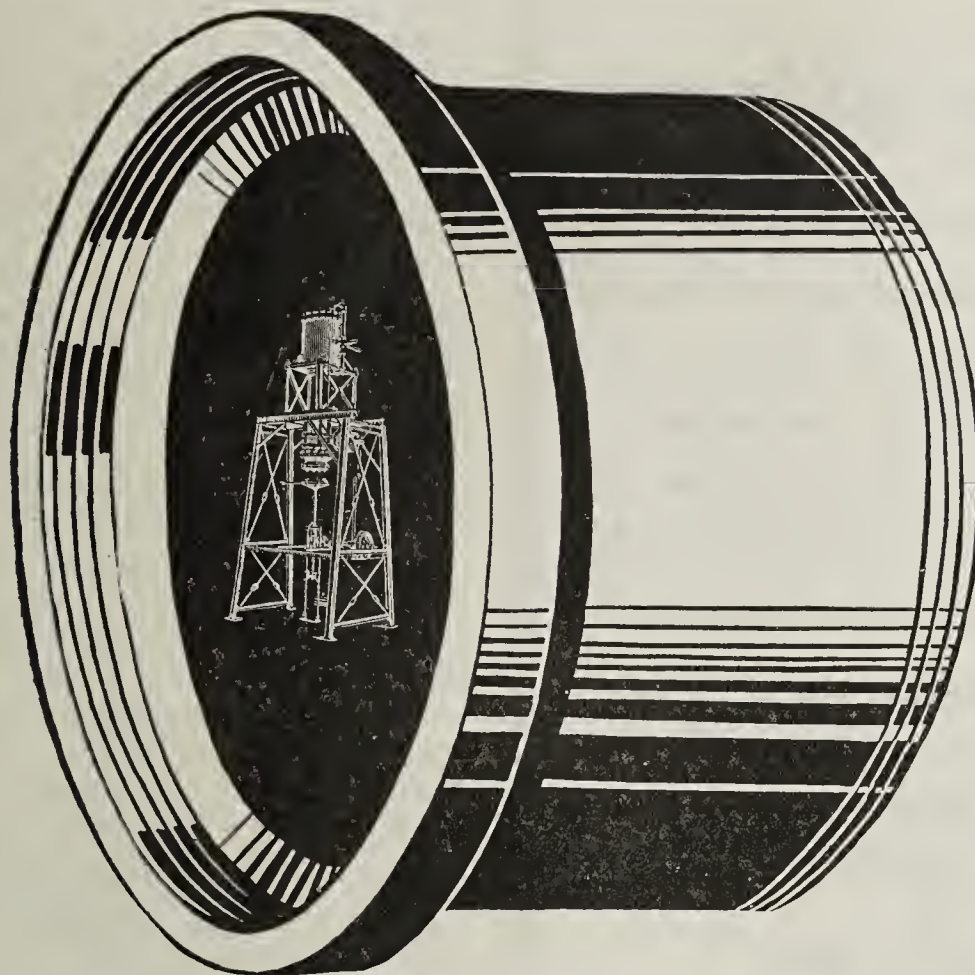
"Well, that's not my fault, is it?" Tom interrupted.

"No, but if instead of letting her pick out the samples and just selling her, say 500 buff fireplace brick; if instead of that you had first asked her what color wall paper she had in that room, what kind of furniture, was it for dining room, living room or bedroom, what kind of mantel she intended to use, then you would have sold her brick intelligently. The chances are that you would have made a sale that would have satisfied her. Even if she had been so foolish as to think she wanted buff brick in a rose gray room you might have been able to make her change her mind."

"But, Daphy, girl, that advice would come from the architect or contractor who was superintending that fireplace job for her."

"Look here, Tom, old dear, don't go so much on the idea of letting George do it! There are contractors and contractors in a town this size." Some are good. Some are bad.

(continued on page 398)



**As surely as day follows night
a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Bulletins on Request

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terra cotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

The book also contains a supplement on the subject of Cracking, Its Cause and Prevention.

Price \$5.00

T. A. Randall & Co.
Publishers Indianapolis, Ind.

MIXING BRICK WITH IMAGINATION.

(continued from page 396)

Take Jake Tracanty. He's a peach of a workman, but a dud of an architect. More than that, Mrs. Chichester probably thought she didn't need any one else's advice. She didn't realize the pitfalls of choosing a fireplace.

"There are probably plenty of people who come buying building supplies who would welcome a suggestion or two. It seems to me it might be a good investment to buy some of the books advertised in this magazine. There's one on interiors and another good one on choosing the fireplace. I'd read up on color on interior decorating, so I could advise intelligently. I'd sell such prosaic things as building supplies with as much care and thoughtful selection as I would high-priced rugs or curtains. Building supplies are really more important because they are more permanent. If you don't like your rugs, curtains or furniture, you can get rid of them. Building supplies are articles not so easily changed.

Daphne paused and gave her husband a quick hug.

"Think it over. Try it out, Tommy," she coaxed. "Here you take a squint at these magazines of houses and house furnishings. There's a good article in that one on shingles. I'll have supper done in a jiffy."

Tom did not commit himself to the plan, but he looked more cheerful than he had in days.

Nothing more was said of Daphne's suggestions, and wise girl, that she was, she refrained from pestering him with questions.

A week later he informed her of his own accord. "I got that room rigged up, Daphne. Old Dixie B. thinks the idea is a humdinger."

"I don't know that it is such a humdinger," commented Daphne. "It's just good sense. Such a room will give you confidence in your stock and in your selling facilities. The very fact that you seem to know what you are talking about will make your customers go more than half way in accepting your opinion. It's that way in other shopping. The confident salesman inspires confidence."

"You're the sharp eyes," teased Tom.

"You needn't try to guy me, Tommy," laughed Daphne, "because it will be love's labor lost. I won't tease worth a cent. Just now I'm eating, sleeping and thinking bricks, mortars, shingles, building supplies, and I know mighty darn well. Tom Mackey, that when you quit thinking of bricks as worth so much a thousand and think of them as a lovely wall or a fine house or a comfy fireplace, then you'll make sales as are sales!"

"Why, Tom, can't you see that what seems only a small and unimportant purchase to you, may be something that the customer has been planning for months? Maybe it meant going without the movies, or concerts or new clothes so as to be able to make that one purchase. Naturally, then, no matter how small it seems to you, it looms big as a Woolworth building to them. Be interested in what they are shopping for."

Tom could not help grinning. Daphne talked in exclamation points, capitals and italics.

"In other words," he jibed, "you think that in order to sell building supplies satisfactorily I ought to put myself in the customer's shoes."

"Exactly," agreed Daphne. "After all, Tom, isn't good salesmanship in all lines based pretty much upon the same underlying principles?"

"You're right, Daphy," her husband conceded. "Just this afternoon a woman came in to select brick for a living room fireplace. She picked out a very dark brown brick, but when she told me she had gray wall paper and white woodwork I suggested a terra cotta fireplace with a mantel to go with the woodwork in the room. And she was tickled to pieces over it. Said it was the first time she had gotten any original hint at the Dixie B. Wayner Co., and old D. B. himself heard her say so."

"And that's that," laughed Daphne.

Six months later Tom Mackey was making a sales record. The end of the year found them really on the up-grade.

Mixing imagination with salesmanship and bricks paid. A good wife is a no less profitable investment.

CLAY TRADE ITEMS OF INTEREST

Harry White, 55, president and general manager of the White Clay Mining Company, died at his home in Cannelton, O., March 4. He was survived by his mother and two brothers.

William Bidleman, a former resident of Wellsville, Mo., who has been connected with the Laclede-Christy Fire Brick Company, has gone to Chicago, where he has secured a position with the Chicago Fire Brick Company.

George C. White, manager of the Wadsworth Brick and Tile Co., died at his home in Wadsworth, March 5, after a lingering illness. Deceased had been a resident there for many years and has been identified with a number of clay and coal companies.

Approximately \$100,000 loss, partly covered by insurance, resulted from a fire which destroyed the five-story plant of the American Vitriified Products Company, Lisbon, Ohio. This concern since resumption of operations last fall, has been averaging about 45 cars of finished products a week.

The "D" mine at Roswell, of the H. C. Schneider Sewer Pipe Co., New Philadelphia, O., was sold this week at a receiver's sale, to Herman C. Schneider, of that city, president of the company, on his bid of \$58,625. Schneider also purchased the mine at Elba, Washington County, for \$27,950. Both bids are two thirds of the appraisal.

Plans to have the Dennison Brick and Tile Company, Dennison, absorbed by the Coal Clay and Rock Products Co., which concern, according to the petition, was pictured as having \$37,000 in its treasury, received a jolt when Judge White appointed G. H. Overholt of Dennison, receiver for the brick company in the first step by its stockholders to force E. L. Junod, a representative of the Coal Clay and Rock Products Co., to return to them all of their stock. Overholt furnished bond in the sum of \$4,000.

Frank C. Nicholson of Kansas City, who is head of the Harrisonville Brick and Tile Company at Harrisonville, Mo., has leased a small brick plant at Knob Knoster, Mo., and will operate it in the future. About 25 men are employed at present and this force is to be increased as improvements are made. Mr. Nicholson has an option to purchase the plant. New belts, new elevators and a new boiler will be added to the equipment at once, and one or two new kilns, for burning both face brick and fire brick, will be erected in the near future. The summer output has already been contracted for sale. Mr. Nicholson announced that he is handling the Knob Knoster project on his own responsibility and that other needed improvements around the plant will be made from time to time and as the increase in the output of the factory demand it. J. W. Jenkins, who has managed plants for Mr. Nicholson before, will be in charge as manager of the Knob

W. E. Edwards, manager of the Edwards Brick Company, at Columbia, Mo., has announced that work is well under way in installing modern equipment in the plant of the company near that city, which is being renovated and overhauled and that thousands of dollars will be spent in the process of rejuvenation. The company will have at least six kilns in operation and each kiln will have a capacity of from 50,000 to 60,000 brick. According to Mr. Edwards, the plant will be equipped to turn out paving brick, common building brick and face brick, besides building tile. He believes that the Columbia market will take practically all the brick that the plant can turn out and that the tile will be shipped out of Columbia. The company owns several acres of land adjoining the factory site on which there is an abundance of clay deposit, sufficient to supply the needs of the company for several years. W. E. Edwards started in the brick-making business at the present site in 1906 and continued to do business for about six years when he sold out. In 1919 he again bought an interest in the factory and has been manager of it since.

According to announcement received in local building circles, the Marshfield Brick and Tile Co., of Marshfield, Wis., will increase the capacity of its clay products manufacturing plant. Louis Hartl, president of the company, states that his firm will spend more than \$30,000 in this work. The plant is located two miles from Marshfield and at present employs thirty men, capable of producing several hundred thousand brick each week. Orders are being filled all over the northwest for brick and drain tile, which on account of the soil texture are of excellent quality. This is the fourth year of

business of the plant, which is operated by power from the municipal water and light plant of Marshfield. The elaborate new Blodgett office building in that city is constructed with Martex Mingled Shade brick, a product of the local clay manufacturing plant.

Four hundred tons of product in the drying shed were consumed, and 100 men employed at the plant are idle. Officials of the concern have not decided definitely if the plant will be rebuilt, although it is believed that the plant will be replaced with a more modern one.

Announcement is made of the erection of a new tile factory at Zanesville. John Morton, at present identified with the Mosaic Tile Company of that city, will build the plant and operate it. The proposed new plant will be of seven kiln capacity. Work on the factory is to start April 1, and operation is expected before the end of the summer. Mr. Morton will resign from the Mosaic Company April 1. Between 150 and 200 men will be employed.

From the demand that has been made so far for the Butler County Jumbo Clay that is being mined at Poplar Bluff, Mo., the owners of property there believe that a continuous market has been found for it. The clay is used in the manufacture of high-class porcelainware. Five cars have been loaded out in the past two months and other orders are yet to be filled, assuring steady operations for some time. The clay is found on the Kearby farm, north and west of Poplar Bluff. A great body of the clay has been found on the farm of W. I. Hooper, adjoining the Kearby place. G. E. Doane states that the Hooper farm has 15,000 to 20,000 tons of the clay on it.

A. P. Green of the A. P. Green Fire Brick Company of Mexico, Mo., has given \$1,000 to the \$15,000 fund that is to be raised and given to J. W. Gallaher of Mexico, who has agreed to erect 60 houses in Mexico this year at a cost of \$150,000. Mr. Green added that he would match the largest individual gift that is given in the present campaign and it equals the \$1,000 given by the Missouri Utilities Company of Mexico. He also added that if the committee from the Mexico Chamber of Commerce succeeds in getting the \$15,000 and the \$150,000 worth of houses are built, that he will expend \$15,000 himself for the erection of dwellings for the use of laborers employed at the Green plant. This will mean that the building operations for houses will total \$165,000.

LET'S KEEP IT LOOKING BRIGHT.



—Chas. Kuhn, Indianapolis News.

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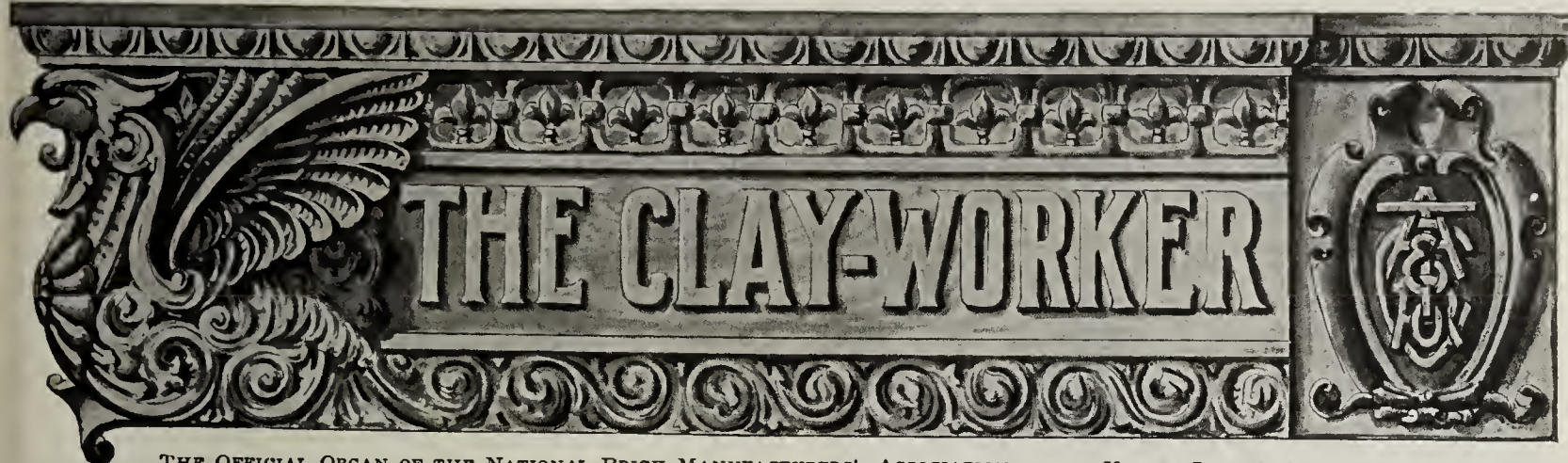
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THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 79

INDIANAPOLIS, APRIL 1923.

No. 5

CLAY PRODUCTS IN SALT LAKE CITY

Descriptions of Clay Products Plants

Impressions of The Clay-Worker Scribe
Gleaned During a Pleasant Visit in Utah's
Capital, a City of Small Brick Homes and
There and at Ogden.

TO THE ORDINARY tourist Salt Lake City may be of interest on account of the romance and mysticism which surrounded it in years past as the home of Brigham Young of Mormon fame; of its location on Great Salt Lake; of the famous Temple of the Mormons which was forty years in building and which cost over four million dollars; the world renowned tabernacle with its great pipe organ; or its Sea Gull monument, the only monument every erected in

memory of a bird; but to The Clay-Worker scribe, the chief reason for stopping over in this beautiful city was that it is the home of the Salt Lake Pressed Brick Company. The fact that impressed the writer too, more than anything else, was the large number of small brick houses. Indeed it will ever remain in my memory as the City of Small Brick Homes.

Whatever else may be said of Brigham Young, the founder of Salt Lake City, he certainly was a man of great vision, for



Beautiful Brick Bungalow, Home of Reynolds Cahoon, Sales Manager of the Salt Lake Pressed Brick Co., Salt Lake City.

the large blocks and wide streets, with clear sparkling waters running at the sides, puts Salt Lake City in a class by itself. At all of the corners of the downtown streets are drinking fountains from which flows ice-cold water brought down from the mountains which lie to the north and east of the town. The Eighteenth Amendment was provided for in Salt Lake City long before it became a law.

The Salt Lake Pressed Brick Company's office is located on Main Street, and is on the ground floor of the building with a fine exhibit of their varied products in the wide windows which face the street. Mr. John P. Cahoon, an old time N. B. M. A. acquaintance, extended a cordial greeting and an invi-



Kilns and Immense Stack of the Ashton Fire Brick Company's Plant, Ogden, Utah.

tation to visit not only the plant of his company located in Salt Lake City, but also to motor us over to Ogden, some thirty-five miles away, that we might pay our respects to Mr. Leek, the manager of the Ashton Fire Brick Company. So one bright crisp morning, together with Mr. Cahoon, his daughter and her husband, Mr. and Mrs. Blaine Seward, the trip was made to Ogden.

The Brick Plants at Ogden.

There are two brick factories at Ogden, the Ogden Brick Co., and the Ashton Fire Brick & Tile Co. At the latter plant we found Mr. Richard Leek superintending the building of a large continuous kiln under directions furnished by the L. E. Rodgers Engineering Co., of Ottawa, Ill. The kiln will be 352 feet long and the brick will be taken to the kiln from the machine.

The company has a fine clay bank from eighty-five to one hundred feet in height and they have never gone down far enough to reach the bottom. All the clay for their buff brick is taken from this bank while the clay for their red brick is brought in from a deposit owned by the company fourteen miles from Ogden.

The raw material is stored under an immense open shed. The outfit for the stiff mud wire cut brick consists of a Fate-Root-Heath pug mill, and machine, with a Freese cutter, while the buff dry press brick are made on two Chisholm, Boyd & White presses.

The brick are dried in a Rodgers Waste Heat dryer and at present are burned in seven down draft kilns, where they are watersmoked and burned with coal, which costs them \$3.50 per ton at the plant. One of the features of the plant of which Mr. Leek is proud is a fine brick stack 190 feet high, which

took 480,000 brick to build, and which towers above everything and can be seen for miles around. It was struck by lightning some years ago, but the only damage was a crack running along the outside course of brick.

The entire plant is one of which the owners may well be proud, for it is well laid out for efficiency and shows evidence of good management. The office is elevated and so located as to command a good view of the entire plant.

Over at the Ogden Brick & Tile Company's plant they were making 30,000 wire cut brick per day. Here, too, they have an immense clay bank and the clay is dug by hand and loaded on to horse drawn carts, which in turn take it to large cars which are hauled up an incline by cable to the plant. In addition to the wire cut brick, they make about 20,000 fine press brick per day, and hollow building block. They have the same sort of an equipment as the Ashton Fire Brick plant, a Fate outfit for their wire cut brick and block, and two Boyd presses. In the summer they dry some of the brick in the open, but most of the brick are dried in a waste heat dryer, which has a



Clay Field Salt Lake Pressed Brick Co., Salt Lake City.

capacity of 160,000 brick. They burn in a large tunnel kiln of twenty-five chambers, 100,000 brick to the chamber.

Mr. Cahoon seemed to think two brick plants and an auto ride of seventy miles was enough for one day, so the main event of the stop at Salt Lake City, the visit to the Salt Lake Pressed Brick Company was deferred until the next day.

Trip Through Plant of Salt Lake Pressed Brick Company.

The plant of the Salt Lake Pressed Brick Company is located on a tract of 135 acres, so there is plenty of room to grow. I was shown over the factory by John B. Cahoon, superintendent, who has grown up with the business. Most of the clay is brought to the plant from the bank, a distance of three-quarters of a mile, by an electric motor, at the rate of one hundred carloads a day, and is carried on a conveyor belt to a disintegrator where it is thoroughly pulverized, and then elevated to a screen. The entire plant is operated by electricity, and each machine has its individual motor. The clay from the different stratas in the bank is mixed in such a way as to obtain the desired shades of brick, which run into a bewildering number of reds, browns, purple, buff and even a beautiful green tinge. They have one clay, however, which is mined at Cedar Valley, about twenty-seven miles from the plant, and this is shipped in by railroad.

The clay is dumped into an immense Hadfield-Penfield hopper which, by the way, is an especial pet of Mr. Cahoon,

Junior, and which he says has cut down the number of men necessary in this department from ten or twelve to one. From the hopper the clay goes to a Hummer screen and any particles too large for the screen are returned to the hopper and then go back to the screen again.

On the dry press plant, they have three Chisholm, Boyd & White presses which give more than ordinary satisfaction—one of the Boyd presses having been in use continuously for seventeen years. They have a little appliance by which they are able to make rough textures and smooth brick on the same machine. On one of the presses, they make what they call the common press brick. All the work here is done piece work, 16,500 brick to a shift of seven hours, three shifts a day.

The brick are taken on pallets in units of one hundred to a Rodgers waste heat dryer and from the dryer to a tunnel kiln of eighteen chambers, with a capacity all told of 650,000 brick. Their fine face brick are burned in round down draft kilns.

They also make 60,000 wire cut brick per day on a Fate-Root-Heath machine, with a Freese cutter, using a Bensing cutter for their hollow building block, of which they make about 100 tons per day, in all sizes ranging from 4x8x8 to 6x12x12. They dry in a large shed, heated by waste from the kilns, and also by steam pipes, using the waste steam only.

The brick are taken out of the kiln in units of 600, and



Boyd Press Used Seventeen Years and Still in Active Service.

the pallets are picked up by an electric truck and taken to the stock piles.

Sewer pipe are made on a Taplin-Rice-Clerkin press. It takes the sewer pipe from three to five days to dry in the waste heat dryer shed, and they are then taken by electric truck to the kilns.

In addition to this wire cut stiff mud plant and the dry press plant, they have another complete plant equipped with Chambers machinery, which has a capacity of 80,000 brick per day of eight hours. This is the plant which was described by Mr. Cahoon, senior, at the Columbus convention, illustrated by slides and later mentioned in *The Clay-Worker*. The brick are taken from the machine to a Rodgers Waste heat dryer and then picked up by cranes and deposited in the big continuous kiln and loaded from kiln to trucks or cars by crane. Unfortunately this plant was not in operation at the time of our visit.

All deliveries to the city are made by trucks, of which the company has six, including two six-ton, and one four-ton truck, with seven five-ton trailers.

The company has built a number of brick bungalows in close proximity to the plant for their assistant manager, superintendent, and the heads of the various departments.

Coming back to the city after the visit to the plant, Mr. John Cahoon, Junior, drove us over the city where we saw hundreds of the small bungalows, and larger houses too, indeed some very fine mansions, all built of brick supplied by the Salt Lake Press Brick Co. The bungalows, however, outnumbered the others to such an extent that Salt Lake City will, as I have said before, always be to me "The City of Small Brick Homes." The thought came to me that if the Salt Lake Press Brick Company could or would only add roofing tile to their output, as do the Los Angeles brick manufacturers, they would make of Salt Lake City a great fire-proof center.

We are indebted to John, Junior, not only for this ride, but also for a most interesting visit to the Mormon center, where we heard the famous organ, the lecture on Mormonism, and took in all the points of interest which is a part of the pleasure of every visitor's stay in this wonderful city.

Mr. Cahoon, Senior, is the president of the company, and he has associated with him another son, Chester Cahoon, who is General Manager, George B. Curley, Secretary, and a brother, Reynolds Cahoon, Sales Manager. The latter believes in practicing what he preaches, as is evidenced by the beautiful brick bungalow pictured on the first page of this issue which he recently built as a home for himself.

Mr. Cahoon believes in advertising and the efficacy of publicity, and no opportunity for boosting the products of the Salt Lake Pressed Brick Company is overlooked. A splendid exhibit was made at the Utah State Fair last fall, and after seeing the illustration of same we agreed with Mr. Cahoon



Top of Salt Lake Pressed Brick Company's Big Continuous Kiln.

that the judges knew their business when they awarded the Salt Lake Pressed Brick Company exhibit first prize.

Any clayworker who gets within hailing distance of Salt Lake City will add immeasurably to the pleasure of his travels and to his general store of clayworking lore by stopping off for a visit with the Cahoon family, for a hearty welcome always awaits any of the clayworking fraternity.

Lincoln Highway folks announce distinct progress toward agreement among engineers as to what constitutes the ideal highway. We notice that in the tentative draft they do not specify brick paving, but they do some good things, one of which is that of asking for greater width, width up to a hundred feet.

GOING AFTER OUR SHARE OF THE WORLD'S BRICK TRADE.

Alfred T. Marks



LOOKING BACK OVER our exports of brick and other clay products for the past year we find that there has not only been a steady and consistent growth in foreign sales, but also that our overseas business has been transacted with a greater number of countries than ever before in any twelve-month.

This means, of course, that our clay products are becoming known and being called for in markets we have never served before and that our success in cultivating new fields may be considered the forerunner of a greatly expanded business in these lines in the immediate future.

In the ten months ended on October 30, 1922, we shipped abroad clay products of all kinds valued at \$2,189,323, or \$219,000 a month in round numbers. These exports were subdivided as follows:

Fire-clay bricks.....	\$1,177,094
Silica brick.....	59,135
Other refractory brick.....	146,089
Refractory shapes.....	130,945
Building brick.....	177,177
Hollow building tile.....	113,294
Wall and floor tile.....	294,895
Crucibles, clay and graphite.....	80,694

In view of the steady increases shown in our foreign sales of brick and other clay products it is none too early to go into the making of plans which will have for their object the placing of a permanent foundation under our overseas business in the clay products lines. For if ever there was a time when it was necessary that we push our products in foreign countries that time is today.

We can not shut our eyes to the fact that, even though trade conditions are still in an upset condition and the foreign commerce of all nations is more or less "out of kilter," the day is coming—and is not far distant—when we shall have to deal with competition of the fiercest and keenest sort, and when that time comes it will be tremendously in favor of our exporters of clay products if they have a well-developed demand for their products to help them in their fight—and the greater the demand the more certain they are to win.

Just think that over for a moment.

The phase of the matter the writer has in mind at this moment is the fact that we have it within our power to lay a lasting and permanent foundation for our clay products trade in all importing countries through the cumulative effort of energetic work now. No other country is in such an advantageous position as we occupy to cultivate the demand for our brick, clay, tile, etc., throughout the world markets.

One of the newest departures in cultivating export trade being advocated by our best foreign trade authorities in view of present unsettled conditions is the plan of "group buying." This is an element in our foreign trade which promises to develop into considerable proportions, and is a factor entirely new, not to say novel and unique, in our export operations. The plan is one, too, which lends itself peculiarly well to our brick and tile goods trade in the foreign countries, and particularly in the smaller nations.

"Group buying," developed to its greatest possibilities, is a factor which will give us many foreign markets which we would not and could not otherwise serve, thus adding materially to our clay products export trade totals. The necessity for some such plan has made itself felt for many years, but it is only within the past year that definite moves have been made to put the scheme in operation; and even though it has

scarcely passed the experimental stage it has proven "the way out" for many foreign importers who would otherwise not be able to handle American products.

Without going into lengthy details, which space will not permit, the plan, as applied to our clay products exports, enables a number of the smaller building material dealers and general importers in a foreign city or country, whose orders, individually, are so insignificant that we could not handle them profitably, to group themselves into what may be called "buying combinations," order in quantity and in bulk, and thus supply their members with the goods which they could not get in any other way.

As will be seen, the scheme is one which, primarily, is carried through without either effort or co-operation on the part of the United States exporters, and depends for its success upon the activities of the foreign buyers. Notwithstanding this, American exporting interests in a number of lines of industry are "lending a hand" in right enthusiastic fashion, and in this way assisting to build up markets and get good and lasting footholds where none existed before.

The plan for the most part interests the smaller dealers and importers abroad, welding them into a single buying machine, enabling them to place large unit orders, and paying for same from one source. In these respects the plan does not differ in any wise, as far as the operations of our exporters are concerned, from dealing directly with one large house. But it is really much more than that. It enables us to establish a great number of small distributing points in foreign countries, thus more widely introducing our goods, and as the member concerns grow to the point where they can be independent buyers we thus profit greatly.

In the several countries where the plan has been put in operation it is being handled by trade bodies or commercial organizations where these exist. In cases where no trade organization is available the buying groups are formed, sending off bulk orders and distributing the goods from a central point on their arrival.

Where a traveling representative—as many do—runs into a city or section of small buyers, whose orders individually he would not care to fill in the limited quantity each could buy, a little missionary work, or even a few well-chosen suggestions, on his part would put these buyers on his order book through a centralized source; and one order—and that a profitable one—would cover the small buyers.

Several features of the plan worth noting are the simplification of the sometimes troublesome credit matter, the elimination of risk of loss through opening bad or doubtful accounts, and the convenience of dealing with one buying source.

The new plan is making quite a "hit" in Latin-American countries, where it is being tried out, and in sections of Europe it is proving popular. With the help and co-operation of our United States exporters in the brick and tile lines and their foreign representatives the plan could well bring about the formation of many buying organizations which in time would develop into big markets for our clay products.

Many phases of the scheme will present themselves to the larger American exporters of clay products who have more or less developed foreign trade organizations or other selling means or agencies in the overseas countries. To these the plan offers opportunities for almost unlimited increase of business.

The "group buying" idea, as herein briefly outlined, is not entirely a leaf from the European exporters' notebook. It represents, rather, an advance on some of the "collective sales" plans which were put in force prior to the world war by England, France, the Netherlands and Germany, and which are again in process of coming back in many of the export fields.

Why not "beat them to it"?

PROPRIETARY RIGHTS IN SECRET FORMULAE.

THE EXACT LEGAL STATUS in regard to property rights in trade secrets, such as the formulae for making particular varieties of pottery, is one of those questions of law which at the present time is in an unsettled condition, although the trend of legal opinion seems to be clear.

The practical importance of the question is twofold. If the secret is revealed by breach of contract or if it is stolen, the question arises as to whether the law will take cognizance of proprietorship to the extent of restraining those who come into illegitimate possession of it, from putting it to commercial use. A similar question arises in case of bankruptcy. Can a bankrupt be compelled to disclose a trade secret in the interests of his creditors?

The latter question, if decided in the affirmative, will settle the former, because transferability, especially under compulsion of law, is the most absolute possible indication that we have a full property right.

Secret formulae and unpatented inventions are in the same class from a legal point of view. There was a time when no property whatever was recognized in them. Any stranger, if he came into possession of the knowledge of the device, no matter how, could put it to any use he chose. The original possessor's only chance of exclusive use lay in keeping his secret inviolate. Even now we would say that to have one's idea registered and thus protected is the only safe course. There seems no likelihood that the law will go so far as to restrain an independent discoverer, not merely for making use of it, but from patenting it. Wherever a claim of independent discovery is made it must rest with the original user to prove that the idea was illegitimately obtained from himself, and this might often be a matter of difficulty.

As recently as the year 1920, the New York Supreme Court, in the case of *Rosenthal v. Goldstein*, a bankruptcy case, decided that the judgment debtor had no property in an unpatented device for sound production, although he had made models of it and particulars of the invention had never been published. The soundness of this decision, however, would probably not be admitted by all the courts, nor does one see how it can logically be maintained under the Federal Bankruptcy Act. This act states, Sec. 70A. (5) that there must be made available to meet the demands of creditors, the whole of a bankrupt's property which, prior to the filing of the petition, he could by any means have transferred, or which might have been levied upon, and sold under a judicial process. There can be no reasonable doubt as to the transferability of an idea, and a registered formula is simply an idea. It can be transferred for a money consideration, and not infrequently it is so transferred. The courts have given the widest possible interpretation to the terms of the statute, and there seems to be no question but that in the very near future we shall have cases deciding that secret formulae and other unpatented devices may be compulsorily disclosed for the benefit of creditors.

Undoubtedly the compulsory disclosure of such secrets will appear very harsh to some minds, and indeed one may well admit its hardship. On the other hand, no bankrupt is allowed to keep undisclosed any other transferable source of wealth, and it seems inconsistent from a legal point of view to allow him to keep what may be the most valuable asset he has, and to let him sell it or use it as a foundation for another business as soon as he is discharged by the court.

The only argument against the complete recognition of property rights in secret formulae in bankruptcy proceedings is the fact that the law does not recognize their proprietary character to the fullest extent in other transactions. The missing characteristic lies in the simple fact that anyone who comes honestly into possession of the secret knowledge can do what he will with it, even against the interest of the original owner, and the law will not restrain him. If ever we reach the point where such use will be restrained, there would be very little distinction left between the ownership of a protected and of an unprotected idea, excepting that in the latter case the original owner would have to prove priority of use as a first step in any litigation, and even then he would be defenseless against an independent discoverer.

In matters of this sort the decisions of leading courts in England have a very great persuasive effect, and very recently in the case of *Keene*, the House of Lords compelled a debtor who had been in partnership with his brother, to put into writing the hitherto secret and unwritten formulae of certain proprietary articles, and to hand them over to the trustee in bankruptcy. This settles the law so far as Great Britain is concerned, and except where statutes intervene, this case may be cited with effect in American courts.

A cautious lawyer could scarcely say as yet that this case states the settled law of the United States, but it requires no unusual boldness to state that it represents the undeniable trend of legal opinion, and it seems inevitable that it will, probably on the very first opportunity, register itself in authoritative judicial decisions.

(Readers in need of legal advice are invited to write to "Attorney-at-Law," care The Clay-Worker. Questions will be answered by letter, or, if referred to on this page, names and particulars which might identify the questioner will not be given.)

THE LOUISVILLE BRICK CLUB.

LOUISVILLE has a new organization in the clay products line which combines both manufacturers and dealers under the name of the Louisville Brick Club, and which was organized to develop better personal acquaintance and promote publicity of brick and other clay products. It is a luncheon club, with a regular schedule of meeting at lunch at the Watterson Hotel on Wednesday, and among local activities in which it is interested at present are the matter of a building code for Louisville, and the bricklayers' school which is being undertaken in Louisville.

The officers of the Louisville Brick Club are Wm. E. Whaley, President, Herman Bishop, Secretary-Treasurer. The charter members include the following manufacturers and dealers:

Manufacturers: P. Bannon Pipe Co., Southern Brick & Tile Co., the Progress Brick Co., The Coral Ridge Clay Products Co.

Dealers: William E. Whaley, L. J. Bolster, R. C. Tway Builders Supply Co., The R. B. Tyler Co.

GOVERNMENT COST.

The National Budget Committee has had compiled some interesting figures on the cost of government. These include cost of maintaining the Federal government, the State governments, municipal and county governments, and the figures show a grand total of \$8,460,011,678 a year, a little more than half of which goes to maintain the national government. This, it is said, represents about 14 percent of the income of all the people of the country and a cost per year of practically \$400 per family.

HOME COMPLETE EXPOSITION AT INDIANAPOLIS.

THE Hoosier Capital stepped to the front ranks in the movement of "OWN YOUR OWN HOME" by staging one of the finest Home Complete Expositions ever held in this country.

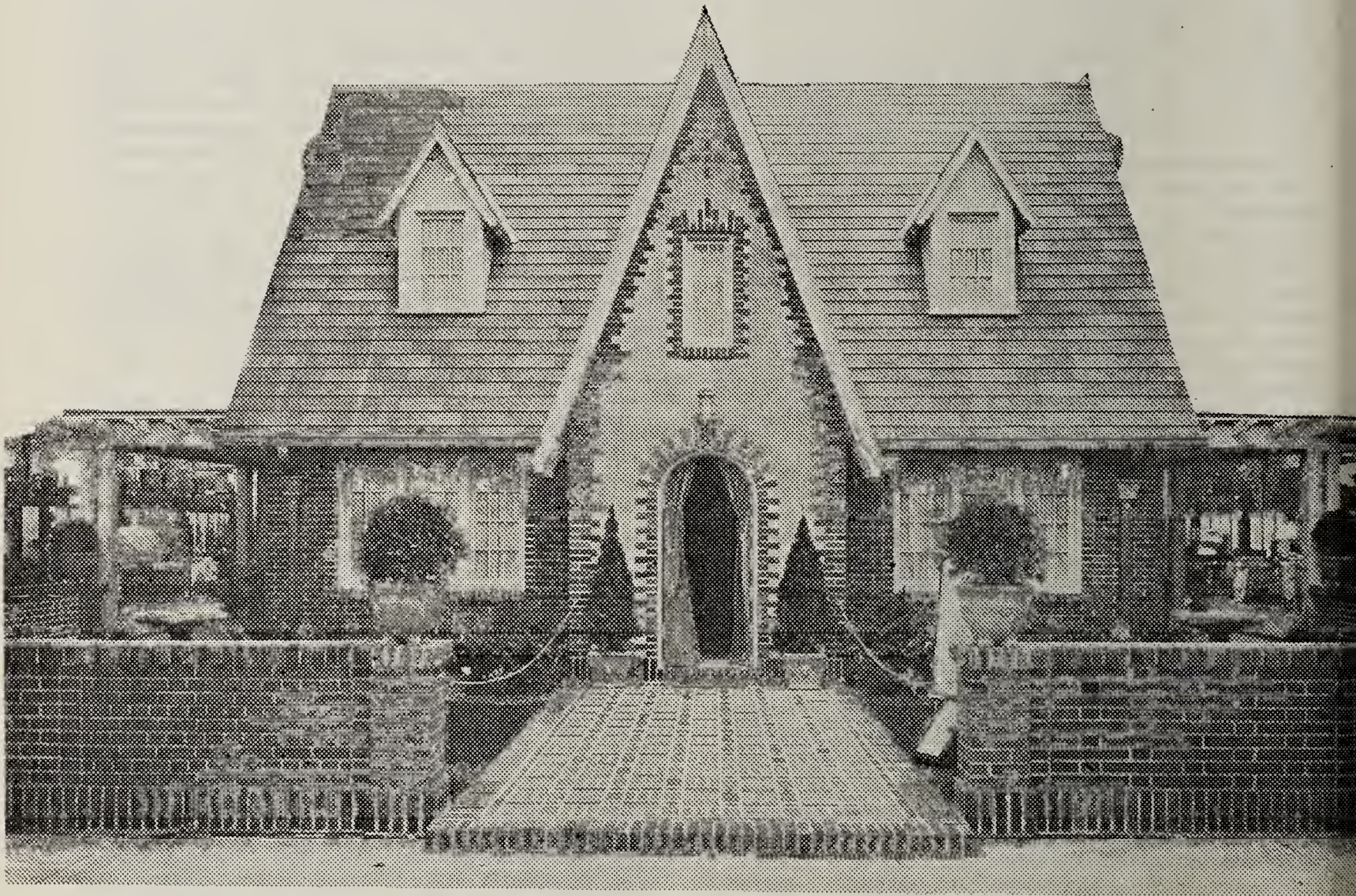
The week of April 2nd was the time, the Manufacturers' Building at the State Fair Grounds was the place and every ticket buyer seemed to have his girl with him.

There was a continual stream of visitors passing in and out of the main entrance, those making their entrance ejaculating

Quarry tile, terra cotta and roofing tile were also used effectively. One of the prominent brick salesmen in Indianapolis declared that this exhibit was far superior to any he had ever seen, including even the fine exhibits at the Chicago Clay Show.

The Hydraulic Pressed Brick Co., The Indianapolis Coal Co., The Interstate Clay Co., of Indianapolis, and the Hoosier Building Tile and Silo Co., of Albany, Ind., all had individual displays consisting for the most part of panels. Of these the Indianapolis Coal Company's exhibit was the most pretentious.

The exposition included exhibits of every article of furnishing and equipment needed in the home, from wall paper, draperies, musical instruments, household furniture, oil



Home Complete Erected Inside the Manufacturers' Building, Indianapolis, Conceded the Finest Brick Display of all "Own Your Own Home" Expositions.

some expression of surprise at the show of beauty that met their first glance, for branches of artificial peach blooms gave the entire exposition a garden effect of such natural appearance that only the sight of the roof would indicate that they were indoors.

At the main entrance, "a pergola decorated with vines and artificial flowers so genuine in appearance that only the perfume of spring is missing" obscured the exposition proper. In the center of the building was a sunken garden effect giving a splendid setting for the main display, an English cottage constructed of brick, terra cotta, stucco and other building material, erected by the Material Division of The Commercial Credit, Audit and Correct Weights Bureau of Indianapolis.

The cost of this exhibit was over \$5,000. Nearly thirty different varieties of brick were used in the exterior of the house and in the wall enclosure, walks and entrance ways.

burners, pictures, washing machines, to even vegetable peelers.

Several miniature houses were erected to show off the interior furnishing for sun parlor, bed room, bath, kitchen, etc., and the walks leading to the entrances of same were through garden effects, making the exhibits most attractive.

Some mighty fine publicity work was done at this Home Complete Exposition, chief of which was the little vest pocket booklet freely distributed by the Building Material Division of The Commercial Credit, Audit and Correct Weights Bureau. We are pleased to reprint a portion of this:

THE HOME COMPLETE

If there is one thing that is born in the heart of every Indianapolis citizen it is the desire to own his own home in In-

dianapolis. It has always been so. Indianapolis is known the country over as one of the greatest home cities in the United States, as a city of stable values, where a building investment is always safe and will always pay satisfactory returns. We are proud of Indianapolis, proud of its wonderful growth and its foremost rank in building development, proud of its beautiful homes and proud of the Indianapolis spirit behind it all.

These are the things that make Indianapolis all that it means to us, that make it the one place in the world where we want to live, that create in each one of us that deep desire to build and own a home in Indianapolis.

The home is the most important of all buildings. It is the cornerstone of a sound and lasting social order. When American homes decay, America herself will decay. As American homes grow and deepen in moral spirit, America will grow in power and influence. And as it is with America as a nation, so it is with Indianapolis as a city.

The ownership of a home creates an individual home-feeling, a greater sense of self-respect, a more responsible citizenship, a keener moral poise, and a profound personal satisfaction.

It also has its practical advantages. When the money otherwise spent for rent is applied as a payment on a home, a man becomes the owner of property upon which he can borrow substantially if necessity arises, instead of simply collecting rent receipts which have no tangible value.

These are the considerations which should lead every man and woman to plan for a home—to lay by a monthly saving for a home fund—to build a home as soon as conditions will permit.

As a matter of fact, you can own your own home if you have the will to do it. Go to some responsible building material company and talk the matter over informally with them. Tell them your situation and let them give you their suggestions as to financing the building of your home and the kind of a home to build. After giving you such general suggestions as may be helpful in formulating your plans, they will undoubtedly refer you to some reliable architects and builders.

Fortunately it is not necessary that you be prepared to pay the entire cost of a home in advance. A good residence lot will serve as a starting point. You may discover that there is a way for you to realize your ambition now and actually build a home in Indianapolis instead of simply a "castle in Spain."

Building a home is a most important undertaking. To satisfy, it should combine utility, strength and beauty. For its utility, convenience in arrangement and use, you look to the skill and genius of the architect or designer. Its strength and durability will depend upon a wise selection of materials. Its beauty will depend in equal measure upon materials and design.

Whatever style of home you may decide to build, however large or small, it is wise to build well, to build for permanence. You can make no investment that will be so rich in returns, both sentimental and practical, as a home planned in good taste, fitted to its surroundings, and built from such materials that it will endure. It is an investment that will pay dividends for life.

REFRACTORIES COMPANY TO LOCATE PLANT IN MISSOURI.

The Harbison-Walker Refractories Company, of Pittsburgh, Pa., is seeking a site for a fire brick plant in Missouri and Fulton has opened negotiations to bring the company to that city. This county probably has more and larger deposits of fire clay of the finer kind than any county in the state, and tons of it is mined and stripped here daily, and used by the Fulton Face Brick Company, of Fulton, and the A. P. Green Fire Brick Company, of Mexico. The latter company ships

the clay from this city to be used in its two plants in Mexico. The Harbison-Walker Company has made known its wants to the officials of the Chicago & Alton Railroad and announces that it seeks a field of clay where it can be stripped rather than mined. Fulton has several such fields, large in extent, that have not yet been touched. Included among these deposits is a 200-acre tract, just two miles out of Fulton, and reasonably near a railroad, which is owned by Judge Robert S. Lamar of Fulton. This clay has been tested for fire brick purposes and was found entirely satisfactory.

FLOORING AND BRICK.

THERE WERE some facts and figures given out at a recent gathering of oak flooring manufacturers which constitute a sort of object lesson and guide post to brick and hollow building tile manufacturers. Some of you may not be able at first to see the connection or relationship between oak flooring and brick, but there is a relationship which is partly due to the fact that oak, like brick, is sold on its elements of beauty and durability. And now for those facts and figures.

Back in 1909 it was estimated that the manufacture and use of oak flooring was forty million feet a year. In 1922 the reports indicate the production and consumption of four hundred million feet. This means that the oak flooring industry has multiplied the production and consumption ten times in a period of twelve years. We should be able to say this same thing of the burned clay products used in structural lines, but we are not. Some day soon if we are enterprising and fortunate enough we may be able to hand out a similar report for brick, hollow building tile and other clay products.

Now, going back to the relationship and the sign board guide post business. Oak flooring, like brick, in the earlier days was thought to be something within reach only of the wealthy. It was a little more expensive primarily than pine, it was a little more trouble to lay, and strange as it may seem this was quite a handicap for a long time, the difficulties of laying and finishing off or what people imagined were the tedious difficulties involved here. By and by through persistent efforts, however, oak was introduced into wider use on the plea of beauty and durability, and on the ground that it would add more to the value of a home than it would cost additional to put it in. This argument has been put forth so persistently and so intelligently that there has at last come an awakening, and there is no item in the building material line which has made better progress during the past decade than oak flooring. That is not all, either. It has made it in the face of stiff advances in prices, the cost of oak flooring today being from four to five times what it was ten years ago. True, meantime the cost of other lumber has gone up so that the contrast is not bad, indeed, the high cost of other lumber has helped in a way by bringing a realization that since people must pay high for their flooring anyway, they might as well get the best and have something of real value for their money. The outcome is that not only do home builders seek for oak flooring, but real estate men and other speculative builders have come to understand that it increases the selling value of property more than it increases the cost, therefore it is a good investment for them, and thus the doctrine and use of hardwood flooring has spread.

Can't you see a resemblance between the arguments used for, and the progress made by flooring, and the promotion of brick and hollow tile for home building? The ideal modern home should carry brick walls along with the oak floor, and there is even a better argument of permanence for the brick walls than has ever been available for the oak floor. The encouraging thing in the situation is in the fact that the oak flooring people have been able, by persistent effort, to convince the building public of the value of their product, and both they and the building public have been the gainers as the result. We can do the same thing with brick and hollow building tile by persistent educational exploitation. It can be done, and it is up to us to get busy at the doing of it.

OUR GREAT NEED.

Some Pertinent Facts About the Business Needs in General and Methods Suggested by Which the Industry Can Be Placed on a Safer and Saner Basis.

Paper by James E. Randall, read before the 1923 Wisconsin Clay Product Manufacturers' Ass'n Convention.

YOU will pardon me if I deal with some points that may seem to be old and worn out by word of mouth and the printed page. I hope there will be found in this conglomerate mass some fresh grains of sand that when put to the burning test will give to the finished product a better bond and stability.

Your Secretary has asked me in his most affable manner that is hard to get away from to write a short paper on "Our Great Need."

This can cover "a multitude of sins," for the needs in the industry seem to be many and variable. Boiled down to the sweet maple sugar state, our needs center around reduced freight rates, lower labor cost, less cost of fuel, better advertising and publicity, and a better knowledge of the business requirements.

The freight rates problem will always remain with us. It will get better, it will perhaps get worse and it will always be necessary for us to have our fighting clothes on for a brush with the powers that be. There will always be need of a careful analysis and co-operative effort in seeking to secure a level of rates in keeping with those from competitive fields and in relation to competitive materials.

Labor conditions will change from time to time. The high cost of living is being reduced gradually, but it will not soon, if ever, get back to the level of days gone by. The average wage on clay plants in Indiana is \$3.50 per day.

Advertising and publicity is an all-important work. We must keep pace and a little in advance of the march of our competing material interests. We must keep continually and everlastingly before the prospective buyer the thought that burned clay products are the best, more durable, far more beautiful, more sanitary and cheaper in the long run. The Build-With-Brick campaign should be revived, and in every locality in this broad land of ours the Build-With-Brick metal signs, posters and newspaper publicity made as conspicuous as possible. And in this boosting don't forget the prize competitions in the schools. This will start the younger generation to thinking in terms of well-burned clay products, as well as take the question more forcefully before the fireside for family discussion.

The cost of fuel will ever be a shifting one, so no absolute figure in this connection can be relied upon.

High cost of fuel, expensive labor, exorbitant freight rates, all combine to make cost of production far greater than in pre-war days. With high cost of production naturally a high price must be asked. With these conditions facing us our great need is the reduction in cost of production if we hope to compete successfully with other materials which, while they have not the talking points, are not as satisfactory from the point of durability, beauty and serviceability as our products, they do have the financial backing and boosting that keeps them continually before the public eye.

Reducing the cost of manufacture is not as difficult as one might imagine for there are many places in and about the plant where economy could be practiced and a good percentage of unnecessary cost removed. There are many labor sav-

ing devices now on the market not known a few years ago that only a few have adopted.

Our great need in solving this problem is the knowing the cost. Accurate cost finding will discover the leaks, the elements overburdening (though unseen and not realized) the production expense.

How many really know the actual cost of their product?

A well known authority states that only 9 per cent of the manufacturers in the United States have real cost systems; that relatively few business men keep sufficiently accurate or comprehensive records to furnish a basis for sound judgment of their own experience.

The feature article in the January issue of Nations Business has much in it of interest to all of us. One paragraph I quote here:

"Let's make a little trip to market with Mrs. Jones and find out why it costs to 'keep up with the Joneses.' One day last summer Mrs. Jones took her market basket down from the peg in the pantry and went down town to buy some supplies. She went to the grocer and the first thing she bought was a package of rolled oats, for which she paid 20 cents. As she put the package in her basket she noticed that it contained one pound and four ounces, net weight. Now it happened that two days before Mrs. Jones has been talking to a farmer who told her that he had just sold his oats for 32 cents per bushel, or 1 cent per pound. Mrs. Jones did a quick calculation in mental arithmetic, and allowing for the fact that the oats from which the rolled oats were made were probably of select quality, and that there was some waste in manufacture, she could not see how the oats in the package could possibly cost more than 3 or 4 cents.

"Mrs. Jones was not an exceptionally curious woman, but she could not help wondering where the other 16 cents went. Had she inquired of the Joint Commission of Agricultural Inquiry she would have learned that of the 20 cents she paid for the rolled oats the retailer got 4.2 cents, of which 3.2 cents represented his expenses and 1 cent, his profit; the wholesaler who sold the rolled oats to the retailer received 1.8 cents, of which 1.5 cents represented expenses and 0.3 cent was profit; the manufacturer of the rolled oats got 9.6 cents, of which 2 cents was profit; 1.2 cents, taxes; 1.6 cents, transportation; 1.7 cents, advertising; 1.3 cents, selling cost, and 1.8 cents, cost of manufacture. The elevator which handled the oats got 0.4 cent; the railroad company, 0.5 cent, and the farmer that produced them got 3.5 cents."

Here are elements we do not consider when we pay a certain price for a commodity, and while this does not have any direct bearing upon your business, doesn't it plant a seed of distrust; doesn't it show that perhaps your own figure of cost may not include all the elements that should go into the record to get the real cost figure?

Let us analyze costs a little. What do you put into your cost record for factor of depletion of your raw material? It is not a free article. Ice is taken off the small bodies of water and sold at a higher price than your product, yet its makeup is of an absolutely free, God-given material. You don't depend

on the activity of nature to make your material. Some day clay lands must be purchased, even if by the future generation. Then the purchasing price will be greater. Your cost figure is not correct if you haven't added a factor of depletion of your raw material. Some manufacturers use the depletion factor of 3 cents per ton.

A gravel association in Indiana has, after a thorough investigation, decided that a depletion charge in gravel plant operations of 5 cents per ton is advisable and justifiable. Also that a 10 per cent depreciation charge per annum is the minimum safe factor in their business.

What factor of depreciation do you use for your kilns, your machinery, your buildings, your drier, etc.? Have you used any factor of depreciation? If not, your cost estimate is false. If you have, perhaps your factor of depreciation is not large enough. Be sure you allow sufficient margin, so when the time comes for rebuilding you have added the margin necessary to take care of the proposition.

Some manufacturers put in their cost record a charge of 8 per cent of cost of kilns, 15 per cent of cost of machinery and tools, 10 per cent of cost of buildings. Naturally the buildings will last longer than the kilns and the machinery and tools will have the shortest life. It has been figured that new equipment (or repairs to make up the difference) must be purchased, amounting to total first cost at end of eight years. Items of repair cost should be entered, as well as factors of depreciation, for they do not cover the actual amount necessary. The kilns last longer than the machinery and equipment. Twenty years has been figured as the average life, yet an 8 per cent depreciation charge has been made a factor of depreciation of the kiln to be added to the cost of the product.

Does the average manufacturer figure the factors of depreciation?

Every manufacturer who wishes to play safe should realize the need of this and use safe factors.

The price of your product should not be based on the price set by your competitor. The problems in clay working operations of plants in the same territory may often vary. Perhaps your raw material is easier to win than the other fellow's. You may have an advantage in some one department, while the other fellow perhaps can dry or burn more cheaply than you can. Then too the other fellow may not know his cost. So it is blind and foolish business to base your selling price on the prevailing prices.

In this connection allow me to quote from a splendid article in the February issue of *System* by August Heckschler, "Can Good Management Be Reduced to Simple Rules?"

"If a competitor is selling or producing cheaper than you are, find out why and then shape your policy on the facts. * * * "Nearly every enterprise is in competition with at least one other enterprise, and it is right and healthful that it should be. But if the other man is consistently underselling you, the only thing to do is find out why. Otherwise your business will be undermined before you know it. The obvious reply to a lower price is a still lower one—a rate war. Rate wars do not pay; like most wars they leave the participants so exhausted at the end that a fresh neutral can step in and take the business. The better course is to discover how the other man makes his price or his quality.

You know your own figures and from them you can judge his. Unless he is operating more efficiently than you are his price may be a result of bad bookkeeping—he may not know that he is selling at a loss. If such proves to be the case it is better to go along on less business for a while than to go out fighting for orders that do not bring profits. There is nothing in striving to see who can lose the most money. Next

best to making a profit yourself is to increase the loss of a reckless competitor.

If, on the other hand, you find that he is making his prices through lower costs due to better methods, the only course left to you is to better your own methods so that you will at least be on even terms."

Find out your actual costs. Be sure to have all the elements of possible loss figured in, and if your competitor is quoting prices below your actual cost of production, make it your duty to show him where he is wrong. Every one is in the business to make a fair and reasonable profit. The better off your competitor is, the better off you are, for it's the fellow on his last legs who puts panic into the whole market. Co-operation in getting at the actual costs and the maintaining of a fair and reasonable price is not only good for the industry, but it is good for the entire building construction trade.

The government says specifically that the manufacturer must keep proper cost records in order that his taxes may be correctly figured.

The government officials say it is absolutely necessary that selling prices include a fair and reasonable profit, and that the one who does not know his costs or wilfully sells below costs is a detriment to his trade and to the government as well.

With the government of this country taking this proper attitude it behooves the individuals in the industry to get together and get down to rock bottom business methods. This can only be done by harmonious action, a co-operation of all for one and one for all. So, as I see it, our great need at this time is to know the cost and ask a price for the product that will bring a reasonable profit to every one.

OXIDATION STUDIES.

SOME STUDIES in oxidation are under way in the Ceramic Experimental Station at Columbus, Ohio, which will be continued through the year.

Much fundamental information of a laboratory character has been obtained as to the oxidation of iron, sulphur, and organic material at all stages in the firing. A paper by Bole and Jackson containing data on the rate of evolution of SO₂-SO₃-H₂O-CO₂ from a fire clay body at varying temperatures in an atmosphere of oxygen is in course of preparation. This is the first of a series of papers to appear giving results of this work. A study of the effect of varying the bathing atmosphere within kiln limits will now be made. It is proposed later to investigate the problem along similar lines on industrial kilns.

After sufficient fundamental data has been obtained, it is proposed to investigate the several special problems which have arisen in the field in connection with the co-operative work with the four Heavy Clay Products Associations. These problems include among others: (a) the possibility of removing sulphur fumes from kiln gases so that they may be run directly through dryers; (b) the cause and prevention of red core in buff face brick; (c) an explanation of the so-called "blue smoke" and its influence on oxidation, (d) the cause and prevention of slabbing or popping of ware from siderite bearing clays.

FACE BRICK TESTS OF GEORGIA CLAYS.

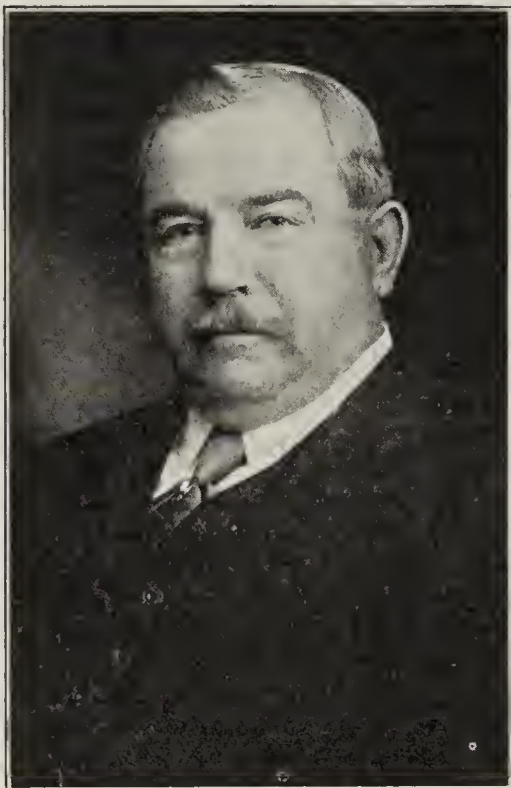
THERE IS IN GEORGIA a great quantity of impure feldspars and pegmatites which are unfit for use as a pottery ingredient but which, it is hoped, will make satisfactory vitrified face brick when mixed with an appropriate amount of white clay and burned to a dense body. With this idea in mind test pieces have been made up at the Ceramic Experiment Station of the Bureau of Mines, using varying proportions of several different feldspars and clays. The test pieces will be burned at several different temperatures.

CONNECTICUT BETTER HOMES EXPOSITION.

RO. CLARK OF THE EASTERN BRICK COMPANY, East Berlin, Conn., has recently put on an entire building show in the city of Hartford, shouldering the whole burden of the project and carrying out a Better Homes Exposition of a very high character.

Mr. Clark secured the large State Armory in Hartford, with a floor area of 50,000 square feet, in the middle of which he built a full size, two-story-and-attic, completely furnished brick house, 36x24-ft., renting the balance of the space in the Armory to manufacturers and dealers of other building supplies, furnishing and equipment for the home, and bringing to the public one of the best expositions of better homes which has ever been held in the East, or for that matter, throughout the entire country.

The Connecticut Brick Manufacturers' Association, of which



R. O. Clark.

Mr. Clark is president and C. W. King the active and energetic secretary, employed a good size space in the Armory with a very artistic showing of "just good old common brick" made in Connecticut, the main feature of which was a very artistic doorway of Colonial type. Also there was shown several panels about four feet long by eighteen inches high inclosed in wood frames, showing the possible effects obtained by common brick as to the different textures and shades by laying them in different bonds and with different mortar joints. During the two weeks of the Exposition, April 2 to 14 inclusive, over 10,000 people passed through the doors and viewed the exhibits.

Charles A. Bowen, assistant to the president of the Common Brick Manufacturers' Association of America, who was in attendance at the Exposition the larger part of its duration, assisting the brick manufacturers and interesting the public in brick, says that it was one of the finest Expositions that it has been his privilege to attend.

The center of interest of the whole Exposition was around Mr. Clark's beautiful brick residence and the handsome exhibit of the Brick Association, and thousands of people were given the information which they were seeking as to the value

and availability of brick for home construction and were given a new view as to the durability and low cost of brick buildings as against other types.

The Exposition has in general stimulated the entire building business in Connecticut and has demonstrated fully, not only to the brick manufacturers, but to all those in any way interested in building, that the demand is strong and the desire of the people is for more and better homes and of a permanent class of construction. Brick was in favor with the majority of those visiting the Exposition and if more of the brick manufacturers throughout the country would show this progressive spirit of Mr. Clark it would be of great benefit not only to their own industry, but to all building interests.

In the official program of The Connecticut Better Homes Exposition a page was devoted to the following article:

BRICK AND THE MAKING OF SAME.

Brickmaking is one of the earliest industries known to man—the Bible tells of the making of brick. Just exactly when it was started no one knows, but there is evidence that it was



Brick House Erected in State Armory for Connecticut Better Homes Exposition.

known of long before 3800 B. C. The Chaldeans had learned the art at the time of the building of the tower of Babel.

Brickmaking began to spread east and west, and we find evidence of it in Persia, India, China, Egypt; and then to Greece, Italy, Spain, England, Holland; and then to our own America. There are two brick pyramids in Egypt, one of which has the following inscription: "Compare me not with stone—I am much superior—I am of brick."

The Romans learned to use brick particularly well, as evidenced by the beautiful buildings standing to this day. In Italy, where among other things, they were used for a wonderful brick road winding over the hills, which was built hundreds of years ago, and is said to be in fine condition at the present time.

Some of the finest old houses in England are built of brick, examples of lasting comfort and dignity.

If one were searching in our own country for an early specimen of bricklaying, the oldest inhabitant would tell us that the first bricks were brought from England. As these were brought in boats purely as ballast, it is probable that the total quantity brought here in this way was comparatively few. It is probable that the earliest settlers in this country first made brick in Virginia about 1611, and the first kiln that

we know of in New England was burned in Salem, Mass., in 1629.

In the early days brick were mixed and made by hand; later oxen were used in treading clay into the proper consistency, and then the brick were put into moulds by hand. In those days nearly every farmer made a few brick in the fall after his summer's farm work was completed. From this small beginning developed the modern up-to-date method of manufacturing brick, and the brick industry has now grown in this country to be one of the leading industries in the building world.

There are many examples of the beauty and durability of common brick structures and dwellings in Connecticut, some of them being the old dormitories at Yale College, the Ives Memorial Library, New York & New Haven Railroad station, The Taft Hotel, in New Haven; Old State House, Center Church, and many other public buildings in Hartford, as well as a large number of very attractive residences.

People are just commencing to recognize the value, beauty and stability of common building brick for use in dwelling-



Brick Display, Connecticut Brick Manufacturers' Association, Connecticut Better Homes Exposition.

house construction. It has besides the advantages named, the qualities of being fireproof and weather-resisting, and a very economical and beautiful home can be constructed of them.

There are no better common brick made in the United States than those manufactured in Connecticut.

LITTLE LOSSES AMOUNT TO BIG THINGS.

EACH SUCCEEDING year in the most essential industry in the world, the burned clay business, brings a fullness of experience that should be profitable to us. We do not always grasp or appreciate the necessity of doing things differently when the need passes visibly before us, but continue in the old rut until apparent financial waste forces us out of it. Little losses are less noticeable than large ones, but they can sink your ship of industry in time if not stopped. Our object is to refer you to a very small but important thing.

Most users of cutting tables, both hand and automatic, do not realize it, but they lose a lot of cutting wires constantly because the makers of cutting tables build them with wire holders having pins or hooks which require wires with the loops at each end entirely too large. Cutting wires would be much stronger, last much longer and less subject to slipping loops or pulling out, if the wires could be made with smaller loops. They could be made this way provided the makers of cutting tables would furnish them with small pins or hooks to hold the wires. It would be to the advantage of all users of cutting tables if they would take this subject up with the firms who made their cutters and thus bring about a change in this very important little thing.

KIESELGUHR BRICK.

The Bureau of Mines in a special report of its investigations gives a description by E. D. Gardner of mining operations in a large deposit of diatomaceous earth or kieselguhr near Lompoc, California. The report says:

"The deposit is owned and worked by the Celite Products Co. H. S. Thacher, of Los Angeles, is general manager, and E. B. Storr, of Lompoc, is plant manager. The company has a mill for treating a part of the product at Lompoc, which is about four miles from the quarries. At the present rate of production, the supply should last for several centuries.

"The principal uses of the kieselguhr are: (1) sawed brick for refractory purposes; (2) compressed refractory brick, which in quality is between the sawed brick and ordinary fire brick; (3) ground product, used as filtering material at sugar mills; (4) lightweight filler in concrete, used instead of rock aggregate in some government work; (5) in-



C. W. King.

sulation purposes; (6) automobile polish, silver polish, diluting talcum powder, etc.; (7) nitroglycerin absorbent in some grades of dynamite."

The method of operating and preparing material is to clean off the overburden and quarry with channeling machines pretty much as soft limestone is cut and quarried in big blocks. The blocks of kieselguhr are then sawed into slabs and brick by special sawing machines developed by the company itself. The sawed brick are made in this way, then other material is ground and made into pressed and sun-dried brick. Also a part of the product is made into a finely powdered state used for polishes and for various purposes.

Kieselguhr is nearly pure silica, is very light in weight and has the capacity of absorbing several times its weight in liquids. The deposit at this place is said to cover several miles and ranges up to 700 feet thick.

The dealer end of the sewer pipe industry should be showing up bigger this year because much of the new home building and demand for sewer pipe comes from the smaller cities and towns.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.

THE BRICK MANUFACTURING industry is being singled out by the Department of Commerce and other governmental agencies having to do with national building construction as one of the country's industries which is setting an example to the allied building material manufacturers in the way of keeping prices down to a reasonable level. It is pointed out here that reports from over one hundred of the country's brick-producing centers show that, while there is a considerable increase in orders booked over the volume for the corresponding period of last year, but two plants report a price increase over the February figures for 1922, these being in New England. The department also reports that prices on common brick in March of this year were lower than they were in March of 1922, thus indicating that the brick manufacturers are not inclined to take advantage of the present activity in the construction field, with its increasing demands, to boost prices. Construction authorities here state that if the other building material industries were to follow the same policy as the brick manufacturers it would serve in great measure to guarantee a busy six months for the last half of the year.

Dr. Fay C. Brown, a widely known physicist, has been appointed director of the United States Bureau of Standards to succeed Dr. Samuel W. Stratton, now president of the Massachusetts Institute of Technology. Dr. Brown has been connected with the Bureau of Standards for a number of years as assistant director, and has been in charge of much of the important experimental and investigation work affecting clay products manufacture as well as other lines.

The Washington bureau of The Clay-Worker has been furnished by the Department of Commerce with the prevailing prices for common brick in forty-three cities on February 1, 1923. Following are the figures, per 1,000:

Kansas City	\$16.50	Sioux Falls	14.20
San Antonio	15.00	Shreveport	15.00
San Jose	17.00	Tucson	12.00
Portland, Ore.	22.00	Sacramento	17.00
Spokane	14.75	Seattle	20.00
Pontiac	16.00	Detroit	16.50
Saginaw	13.75	Bay City	14.00
Milwaukee	13.75	Benton Harbor	17.00
Council Bluffs	16.50	Waterloo	17.30
Pittsburgh	16.00	St. Louis	15.50
Cleveland	16.00	Erie	16.75
Lorain	20.00	Akron	15.00
Dayton	17.00	Newark	19.00
Fitchburg	24.00	Hamilton	24.00
New London	30.00	Fall River	26.00
Rochester	17.75	Albany	22.50
Niagara Falls	24.00	Buffalo	20.12
Scranton	25.00	Poughkeepsie	18.00
Richmond	18.25	Baltimore	20.00
Columbia	12.00	Fairmont	24.00
St. Petersburg	19.00	New Orleans	15.75

Grand Forks 13.50

Following are prices prevailing on the same date for 8x12x12 hollow building tile:

Kansas City	\$0.22	Shreveport	\$0.22
San Antonio	.21	Tucson	.18
Portland, Ore.	.15	Seattle	.25
Detroit	.20	Pontiac	.18
Bay City	.18	Saginaw	.20
Milwaukee	.15	Waterloo	.14
Council Bluffs	.13	Pittsburgh	.21
Erie	.19	Akron	.19
Lorain	.18	Newark	.18
Dayton	.18	Hamilton	.19
Fitchburg	.27	New London	.28

Albany	.27	Rochester	.21
Buffalo	.20	Poughkeepsie	.21
Scranton	.24	Baltimore	.21

The Bureau of Standards has just completed a comparison of properties of the twenty-one ball clays used in the United States. The clays include both American and English origin, so that the investigation afforded an excellent opportunity for studying the properties of the domestic as compared with English material.

Determinations were made of the water plasticity and shrinkage relations upon drying, amount of arenaceous material retained by 120-mesh sieves, rate of flow of slips, cohesion of plastic clay, dry transverse strength when mixed with an equal part of flint, time required for oxidation of carbonaceous material at 750 deg. C., porosity and volume from Orton Seger cone 01 to cone 12, and coloring effects in a standard body. The results of this work may be summarized as follows:

In the standard body, the Tennessee clays, as a class, showed the best color. The Kentucky and Devon clays were fair in this respect, while the Dorset clays were comparatively poor.

The English clays have a more desirable firing behavior and greater strength when dry, but the American clays contain less material to be removed in body preparation, less carbonaceous matter which may lead to trouble in firing, and burn to a better color in the body. Because of their better color, they may be used in larger quantities, thereby overcoming somewhat their lower strength. With a slight adjustment in flux content of the body, they may be used successfully to replace the English clays.

This work is described in Technologic Paper No. 227 of the Bureau of Standards, which can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents per copy. All of the results are given in tabular form and graphically when feasible. A detailed description of each individual clay is given, and a classification of ball clays based on their properties has been drawn from the results of the investigation.

In view of the fact that there are being received by the Department of Commerce and other government departments not a few requests from foreign countries for American brick-making machinery as well as brick, it is suggested that our manufacturers in these lines do not delay in registering their names on the Department of Commerce's "Exporter's Index." The Bureau of Foreign and Domestic Commerce maintains a classified index of American merchants and manufacturers interested in oversea trade and supplies them, without charge, with reserved and confidential information on foreign trade opportunities and trade lists and with other helpful data received from commercial attaches, trade commissioners, consular officers, and other official representatives abroad.

The distribution of the confidential information reserved from the Foreign Trade Opportunity announcements, the lists of dealers and importers in foreign countries submitted by various official trade representatives, the confidential circulars released from time to time, and other confidential and semi-confidential material received in and prepared by this Bureau is confined in general to American firms recorded in this special index. This is a confidential list, the object of which is to make certain that important confidential information relating to specific opportunities for the sale of American goods abroad, collected at Government expense for the benefit of American business men, is made available only to American firms which will use it in selling American-made products exclusively.

In order to have names recorded on the Exporter's Index

it is necessary to fill out a form, stating whether the applicant is a manufacturer, manufacturers' agent, or similarly engaged in commercial activity, and specifying the goods manufactured or exported and giving certain other details. This form (Form 57) may be had upon application to the Bureau or its district or cooperative offices.

The United States Patent Office reports having been advised of the decision rendered by the U. S. Circuit Court of Appeals of Georgia in the infringement case of the Denison patent for hollow clay building block. The suit was brought by the Standard Brick Co. against the Denison Interlocking Tile Corporation. The Appeals Court of Georgia held that the patent, as to certain claims, was valid and had been infringed.

In the month of January, 1923, according to statistics available at the U. S. Census Bureau, there were produced in the United States 64,804,000 clay fire brick, as against 53,637,000 in December, 1922; face brick produced in January of this year, 43,240,000, and in December, 1922, 45,181,000.

ALTHOMAR.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

 BUILDING OUTLOOK in Evansville and other southern Indiana towns is much better than it was this time last year. The building permits in the city of Evansville for the present year up to the first of April, totaled more than \$1,000,000 and Edward C. Kerth, city building inspector, expresses the opinion that for the year the permits will reach more than \$5,000,000. This will break the record of any year since the close of the world war. There is a great deal of building now under construction and much has been planned for the coming summer and fall. Many of the towns in southern Indiana have more building on hand now than they have had for many years past. Brick manufacturers in Evansville and southern Indiana towns view the outlook for business as one of encouragement and they believe their volume of business for this year will greatly exceed that of last year. Tile factory owners also are looking for a better year.

After being shut down for the last three years, the Colfax Drain Tile Company's plant at Colfax has been re-opened. The plant is owned by J. B. Casey, of Crawfordsville, and H. H. Lee, of Colfax, who have announced they have sufficient orders on hand to keep the plant going for several months to come.

In order to increase its output, the Best Brick Company, of Evansville, will install about \$10,000 worth of new machinery in its plant on the Henderson road below Evansville, it was announced a few days ago by Walter P. Woods, secretary and general manager of the company. The company is booking a good many orders and the outlook for future trade is quite good.

Work on the new factory of the Cannelton Sewer Pipe Company at Cannelton is progressing nicely and the factory will be completed some time this summer. The work is being done by the M. J. Hoffman Construction Company of Evansville.

The Louisville Pottery Company, which has been operating a clay mine on its holdings on West Fourth Street, Huntingburg, Ind., has purchased fifteen acres of clay land from John Fuchs, at the southwest city limits of Huntingburg and is sinking a mining shaft. The clay is said to be of superior quality. The purchase price for the fifteen acres was \$4,500.

The Best Brick Company at Evansville is completing an order for 500,000 face brick for the new Ford Morton Com-

pany's plant at Hekwisch, Ill., according to Walter P. Woods, secretary and general manager of the company.

The city council at Shelbyville has contracted with the Interstate Clay Products Company of Indianapolis for 23,000 brick for the new Major Memorial Hospital at Shelbyville. The price was \$32.75 per 1,000.

Reparations on account of the unreasonable rates charged by the Southern Railway Company during the period of government operation for the transportation of coal from the Boonville mining district to Huntingburg, Tell City and Cannelton, have been directed paid by April 25th by the Interstate Commerce Commission sitting at Washington D. C., according to information sent out a few days ago. Among the concerns that will get reparations are the Cannelton Sewer Pipe Company at Cannelton, United States Brick Company at Tell City, and Huntingburg Pressed Brick Company at Huntingburg.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company at Evansville, has been elected one of the trustees of the Evansville College to take the place of Joseph Graham, who resigned because of the press of other business.

The contemplated brick, tile and building block plant to be located in McLeansboro, Ill., seems to be an assured fact, according to late news from that town. All the common stock and most of the preferred stock has been subscribed for. E. C. Ver Beck, who will have charge of the active management of the plant, is an experienced brick man and is well known to the brick manufacturing trade. It is the intention of Mr. Ver Beck to devote most of the plant to the building of hollow building blocks for the southern trade. He already has a contract with Denne and Sons, of Memphis, Tenn., for the delivery of 6,000 tons of such ware as soon as the plant has been built. The shale on the land where the plant is to be built has been tested by a first class ceramic engineer and found to be of excellent quality and is adapted to the making of bricks.

The bricklayers' scale in Evansville has been raised from \$1.15 an hour to \$1.30 an hour, according to an announcement made a few days ago by Fred Zahn, president of the bricklayers' union. The union had asked for a 10 per cent increase, but the contractors voluntarily gave a 15 per cent increase because of the scarcity of bricklayers in Evansville. Master plumbers have signed a contract with the journeymen plumbers and steamfitters of Evansville to pay them \$1.12½ an hour. The old scale was 95 cents an hour and the men had made a demand for \$1.25 an hour. The carpenters at Evansville have been given an increase of 14 cents an hour. The old scale was 86 cents an hour and the increase makes the scale for the coming year \$1 an hour. The electricians in Evansville were increased from 85 cents to \$1.25 an hour and the painters were increased from 86 cents an hour to \$1 an hour.

A HOOSIER.

FARMER CO-OPERATION.

Whatever the future may bring in the way of ups and downs to prosperity on the farm, there is no question that organization and co-operation has resulted in figuratively lifting the farmer out of the mire during the past year. Farm values and prices on farm products suffered more comparatively than anything else and the situation a year or so ago was very bad. Bad enough to make a good opening for those with ideas of organization and co-operation. The result has been to put millions of dollars into the hands of farmers in the way of increased returns for their products. It is a splendid illustration of how co-operation brings beneficial results in any line of industry. Moreover, whatever may happen to it in the future in the way of dissensions and falling from grace and co-operative effort here as elsewhere has already demonstrated that it is worth much more than it costs.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Three. The Basis and Classification of Costs.

IN LAYING the foundation of a cost system it is very important to establish the proper basis for finding the cost. By this is meant the units upon which cost is figured. The man who does nothing but make common brick would have no difficulty in finding the gross cost of his product. All he needs to do is to find accurately the cost of one brick, and then the basis for his price is established. Of course, this will not give him any comparison of the individual expenses, but it will tell him what to charge. If he finds his price is too high he will have to make a closer analysis of his costs in order to discover where he may cut the price in order to meet competition.

But the case of the clayworker, who turns out more than one product, is different. Suppose such a man is making sanitary ware, fire-brick, and insulation material. Unless he has an adequate cost system this clayworker's troubles begin from the time he mines the clay until he collects the money which represents his earning. He probably bought the clay mine for a lump sum but he cannot put the same cost figure on ball clay that he does on fire clay and on fire clay that he does on a mixed, cheaper grade clay. If he does this he will find that purchasers of his wares will make heavy demands on the higher grade clay that is selling at the uniform price and leave him with the cheaper grade of clay on hand when he has stripped his mine of the good material.

Suppose the same worker is manufacturing sanitary ware of varying sizes. Then he cannot take the total units produced and divide them into the total cost to arrive at the price per unit. Because the cost of the material and of firing are sure to be different, even when the cost of moulding and drying is the same.

The proper basis for figuring costs in clayworking is the individual unit produced when the plant turns out only one unit—such as common brick, fire-brick, etc. Where the products vary the only basis possible is a special rate for each product and this rate is arrived at by dividing the plant into production centers. By this system every separate operation is made a production center or for all practical purposes, a plant by itself, and through a system of symbols or numbers, all the charges that can be made against this particular operation are accumulated against it and the total cost is apportioned to each unit on the basis of time consumed or effort expended. For example, mining or cutting the clay would be made a production center. If all mining is done in the same place and in the same way, every ton would cost exactly the same to mine. But if one strata is near the surface and easily accessible and the whole layer is exposed so that no other clay need be cleared away before this particular variety can be taken out, the cost per ton may be quite low. But, if another strata is considerably below the surface and reaching it involves considerable preparation, then the cost per ton may be much higher. If there is a variation in the cost of mining a ton of clay, this difference must appear in the cost figures and two or more production centers will have to be established in place of one. The cost of transporting the

clay to the disintegrator should be added to the cost of mining. The next production center is the disintegrator itself. Here, all clay goes through the same operation, where this process is used, and therefore, all cost would be the same on a per ton basis. If this plant manufactures brick of any kind, the moulding machine and the wet and dry pans will be the next production center, or, where other products are produced, the corresponding equipment is made the production center. We will assume that this is a brick-making machine. The cost per hour of operation is determined and then the number of units of each kind produced per hour are divided into this cost to arrive at the individual cost per unit.

The same procedure would be followed in the drying room, or, the drying operation. The cost of this operation per hour is then determined and then the length of time of drying each product determines the cost per product. In the burning kiln, the cost is arrived at in the same way and varies according to the size of the object burned and the length of time required for burning, together with the amount of coal necessary.

However, it is not enough to find the cost of each unit. It is also necessary to get a report of the sum of all operations into the general records. This is done by classifying all activities and transactions of the plant and by collecting them under proper groups. These groups are known as the general accounts and the records of all work, all expenditures, all income must find their way into the general accounts in some manner or another.

An examination of the accounts will show that they fall into two general classes, namely, those accounts which are permanent in their nature, and remain on the books permanently as open accounts, and those accounts which are opened at the start of any production period and closed at the completion of it. In other words, those accounts that have to do directly with production are of a temporary nature, and those that have to do with the fixed investments themselves are of a permanent nature.

It is very important, therefore, in laying out a cost system for clayworkers, to make a careful study of all the transactions involved in operating a brick or ceramic plant, together with the mining and to classify these transactions in their logical order. This classification depends upon the kind of information desired on the balance sheet. In a small plant there would be fewer classifications, more of the expenses being grouped under one head because of the small amounts involved. In a larger plant the classification would be in greater detail, but it would follow the same general principle as those of the small plant. The following description of a classification of account is based upon a small plant, it being understood that where the classification is not in sufficient detail for a larger plant, further refinements can be made.

The General Classes.

In general, all accounts of the average clayworker's plant may be divided into

1. The Asset Accounts, or those accounts representing the property and possession of the operator.
2. The Liability Accounts, or those accounts which represent the liability or debt.

3. The Revenue Accounts, which record the gross and net revenue.

The Expense Accounts, which represent all the indirect charges against the operators.

The Asset Accounts.

The Asset Accounts fall into two groups—the current assets and the permanent assets. The word “current” in its original sense means flow, and the current accounts are those accounts which flow constantly, in much the same way as a river or a stream, increasing or decreasing in volume with time and season. These accounts generally include the following items: Cash, notes receivable, accounts receivable, stocks and bonds, raw material, work in process, supplies, prepaid insurance, prepaid taxes. Permanent assets are those which do not regularly change their volume or character. They remain the same unless the business is expanded by the owner. These may be listed as follows:

1. Land.
2. Building.
3. Machinery.
4. Equipment.
5. Furniture and fixtures.
6. Organization expenses.

It will be noticed that in the two groups above, there is an item in the current assets for raw material and another item in the fixed assets for land. The clayworker who owns his own land is faced with a curious problem. The raw material which goes to make up his product is deposited on the land itself and yet, it cannot be called a fixed asset because it is perishable and is being depleted month by month. On the other hand, there is a certain portion of this clay land which is permanent in its nature and whose value will never be destroyed—that is, after a clay mine has been stripped of all its valuable clay or all its useful clay, it may be leveled off and the land used for a factory site or any other purpose. Thus the book value of the clay property is divided into two parts—the value of the area covered by the clay property as real estate, and the value of the clay itself as raw material. For example, if the clay land is worth \$2,000 an acre, and the general real estate in the vicinity is worth \$500 an acre, then the clay on one acre of land is worth \$1,500. This division in the value of the clay property is important because it permits accurate costing of the product and enables the operator to charge off depletion properly.

Liability.

Liabilities fall into four general classes, namely: current liabilities, permanent liabilities, reserves, and the capital accounts. The current liabilities are listed below:

1. Notes payable.
2. Accounts payable.
3. Accrued payroll.
4. Accrued cash.
5. Accrued insurance.
6. Accrued interest.

The permanent liabilities are:

1. Mortgages payable.
2. Outstanding bonds.

The reserves are:

1. Reserve against depreciation.
2. Reserve against depletion.
3. Reserve against theft.
4. Reserve against bad debts.

Present Worth.

The capital accounts are:

1. Capital stock and cash.

2. Surplus.

3. Profit and loss to date.

The revenue and cost accounts are:

1. Sales.
2. Cost of sales.

The Expense Accounts.

The expense accounts consist of selling and administrative expenses and the plant or general expenses. The administrative and building expenses are.

1. Executive salary.
2. Clerical salary.
3. Office expenses and supplies.
4. Association dues.
5. Charity.
6. Commission.
7. Advertising.
8. Telephone and telegraph.
9. Miscellaneous expenses.

The usual burden or overhead expenses are:

1. Salary of foreman.
2. Clerical expenses.
3. General labor.
4. Bonuses.
5. Machinery and equipment.
6. Electric current.
7. Coal.
8. Charcoal.
9. Trucking and carting.
10. Gasoline.
11. Taxes.
12. Depreciation.
13. Depletion.
14. Stock insurance.
15. Maintenance of building.
16. Transmission.
17. Miscellaneous expenses.

The above is given as a normal distribution of charges and expenses. It is by no means final or complete. A small plant could do with less accounts and a larger one would need more.

The Order Cost Theory.

In order to make costing and general management a simple matter, it is necessary to divide production into definite periods of time and quantity. This is made easy by the fact that the kiln or the kiln floors, in the common brick plant, really determine the amount of work that can be done over a given period, and thus give the operator an opportunity to measure his results and find he has been producing efficiently or not. We will say that a fire-brick plant turns out 50,000 brick per day. Under proper conditions and with good labor output, 300,000 bricks per week is the normal output for this plant. Any quantity less than that number produced in one week indicates inefficient operation for one cause or another, and any quantity exceeding this number indicates a saving has been made. The cost system carries this measure of the operations one step further and designates the output of a week or the capacity load of the kiln by an order number, which states that a certain number of common brick, fire-brick or other ware, must be produced within a given period, and this order is charged with all the clay, labor and indirect expenses due to it as indicated by the predetermined rates for each unit of production, that is, for each kind of ware produced. This is called the order method of costing because the work is theoretically done through order. This enables the operator to base his cost on the individual orders and to determine in each case whether loss or inefficiency is due a

particular class of work or to uncontrollable accidents for which no one class should be held to account.

The way to keep costs on each order and not overload the bookkeeper with work is to separate the cost from the general books. The time reports, the material charges and the expense charges are printed to standard size and when they are filled out they are filed behind their order numbers. All that is necessary to find the cost of one order is to refer to the file and collect all labor, loading and expense charges against the one order number. By this method the expenses are also treated as orders and all labor and material on work that is charged to an expense account must be charged to the expense order number.

(To be continued.)

MEETING OF KENTUCKY CLAYWORKERS

THE KENTUCKY CLAY Products Association met in annual convention at the Watterson Hotel in Louisville, Ky., April 10.

The annual meeting was called to order by President F. C. Klutey at 11 A. M. in the writing room of the Watterson Hotel, with about a dozen in attendance.

After the reading of the minutes and other official papers, B. A. Word, of Louisville, who looks after traffic matters for the Coral Ridge Clay Products Co., and the Southern Brick & Tile Co., made a talk explaining the efforts to get a more favorable rate situation in the matter of clay products in the southern territory. He reviewed the efforts so far made, and pointed out that the ground basis would have to be laid on the theory that southern roads maintain their present rate of earnings. So the problem is to prove how this may be done on a different and more favorable rate basis.

At the conclusion of his talk and the round of questioning that followed, a motion was carried that Mr. Word draw up a blank form for record keeping, and that these be printed and distributed by the secretary to all clay products people of the state, and that all be asked to keep records for a period of two months, presumably May and June, so as to have specific data on the present traffic and rates in comparison with the proposed rates.

The session then adjourned for lunch, at which the visiting brick men were guests of the Louisville Brick Club, of which Wm. E. Whaley is President, and Herman Bishop is Secretary-Treasurer. This was a get-acquainted session in the dining room, very much enjoyed, and for which a vote of thanks was tendered the Louisville Club. President Whaley in turn extended a standing invitation to all the brick men when in town to meet with the Louisville Club, which meets regularly for lunch at 12:30 on Wednesdays.

At the afternoon session a motion was carried that Mr. Word draft a letter to be signed by the President of the Association to the Southern Freight Committee objecting to the joint rate feature in the new proposed tariff.

A check-up on prices and trade conditions showed very little change as to prices from a year ago, and not much variation. The price range on hard common was from \$13.00 to \$16.00 at the kilns, with face brick ranging upward from \$21.00. There is practically no stock on hand but what is sold. Dalton Bros. Brick Co., of Hopkinsville, reported an unsold surplus of about half a million. Others reported that they have orders for what stock is on hand and will be running short before their first burns are out.

In the face of this situation of good demand and no surplus stock, the meeting went on record as being determined not to advance prices, but to hold steady at the present range, as it is not considered good for business in the long run to have runaway prices now.

A motion by J. T. Howington that the treasurer compensate secretary J. Crow Taylor in the sum of \$25.00 was passed. Then Mr. Howington asked permission to amend, and translate that compensation into German marks. Treasurer Bishop was asked to call up the banks for the exchange rate at the moment, and came back with figures which were translated into an estimate that it takes 20,000 marks to equal a dollar. And since there was an expense bill from the Secretary of \$20.66 it made the salary figure 500,000, the expenses for the year 405,200, making a total of 905,200 marks. Andrew Hillenbrand then volunteered to send one of his trucks out to haul the funds from the treasury to the Secretary.

After the fun of translating the Secretary's salary and expenses into marks was all over, the meeting settled down to business again and laid plans to lay the state off into three districts and have group organizations and meetings, one in the eastern district, one west and one central. The plans are to have the initial group meeting soon at Lexington, and then to follow this with another in the west end, while the Louisville Brick Club will serve the central group.

On motion the present officers were re-elected for the ensuing year, and changes were made in the directorate, the officers and directors as they stand today being as follows:

Officers.

President, F. C. Klutey, Henderson; Vice-President, A. H. Schneider, Nicholasville; Treasurer, T. Bishop, Louisville; Secretary, J. Crow Taylor, Louisville.

Directors.

Term Expires 1924—

J. H. Clark, Owensboro.
T. M. Dalton, Hopkinsville.
H. C. Kleymeyer, Evansville.

Term Expires 1925—

W. H. Hall, Maysville.
Geo. Carey, Lexington.
Frank P. Hill, Paducah.

Term Expires 1926—

J. T. Howington, Louisville.
M. J. Baunon, Louisville.
L. Ruby, Providence.

Attendance: T. M. Dalton, Dalton Bros. Brick Co., Hopkinsville; A. H. and F. O. Schneider, A. H. Schneider & Sons, Nicholasville; G. F. Murphy, L. J. Bolster Co., Louisville; Wm. E. Whaley, Louisville; J. T. Howington, Coral Ridge Clay Products Co., Louisville; T. Bishop and Hermon Bishop, Southern Brick & Tile Co., Louisville; Andrew Hillenbrand, Progress Press Brick Co., Louisville; F. C. Klutey, Kleymeyer-Klutey Brick & Tile Co., Henderson; A. G. Shields, West Point Brick & Lumber Co., West Point; B. A. Word, Traffic Manager, Louisville; A. W. Williams, Brick & Clay Record, Louisville; J. Crow Taylor, The Clay-Worker, Louisville.

SOME MEN HAVE ALL THE LUCK.

If a man bought a lot with the intention of erecting a brick building and found buried in the lot a quantity of perfectly good brick, he should consider himself lucky. That is exactly what happened to George Raible, of McKeesport, Pa. He bought a lot and set to work a gang of excavators, who were not engaged a great while until a steam shovel brought up a load of brick. Investigation showed that the lot was almost full of brick that never had been used. They were in perfect condition. The bricks were carefully removed and are to be used in Raible's building. In money the find is worth about \$1,500. Old-time residents are inclined to believe that a brickyard once was operated on the site.

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing the Commissioner of Patents, Washington, D. C., and enclosing 10 cents for each patent wanted. In ordering, give patent number only.]

No. 1,442,065. Tunnel Kiln. Carl B. Harrop, Columbus, Ohio, patentee.

The method of firing clay ware in a tunnel kiln, which comprises introducing fresh air to the oxidation zone independently of the product of combustion from the furnaces.

No. 1,440,716. Stripping and Conveying Mechanism for Continuous Brick and Tile Machines. Clyde H. Bliss, Birmingham, Ala., patentee.

The combination with a continuous molding machine, of a continuous transfer to strip pallets from a molding machine, a moving receiver on which the pallets are deposited by said transfer, and means to move the transfer mechanism in correspondence with the receiver to deposit the pallets in stacks thereon.

No. 1,441,362. Clay Building Block. John A. Malcolm, Cape Town, South Africa, patentee.

A building block comprising in combination two portions connected by interlocking projections forming a bulbous joint with a damp-proof seam between, said interlocking projections forming internal horizontal and vertical air passages in said block.

No. 1,442,122. Machine for Making Brick. Harry V. Brown, Oklahoma, Okla., patentee.

In a machine for making brick, a pivot center, mold supports pivoted to and radiating therefrom, molds on the free ends of said supports, a fixed stroking bar in the path of the molds and beneath which they pass; a locking bearing on each mold, and means automatically engaging the same after the mold passes the stroking bar.

No. 1,440,715. Continuous Brick-Molding Machine. Clyde H. Bliss, Birmingham, Ala., patentee.

In a continuous brick molding machine, relatively movable and stationary parts forming continuous brick molds, pallets forming bottoms for said molds, means to feed and compress material in said molds, and automatic conveyor means to remove the pallets successively and strip the formed brick from the molds, said means acting to trowel two ends of the brick.

No. 1,441,091. Apparatus for Drying Clay Bodies. Henry Howson, Philadelphia, Pa., patentee.

The combination in a dryer, of a casing; an endless conveyor; means for driving the conveyor; a series of trays on the conveyor; a cover pivotally mounted on each tray; an arm projecting from each cover, and rails with which the arms come in contact so as to raise the covers.

No. 1,441,661. Brick-Handling Mechanism. Charles S. Church, Wellington, Ohio, patentee. Patent assigned to Charles M. Ross, Wellington, Ohio.

The combination with a tier of drying shelves, of a conveyor movable longitudinally of each of said shelves and adapted to receive and support a series of pallets; means adapted to depress or elevate each conveyor relatively to the corresponding shelf, so as to deposit such pallets thereon or carry same clear thereof as desired; an elevator located adjacent to one end of said tier of shelves adapted to receive individual pallets and carry same past said shelves; means adapted to transfer pallets from said elevator to the conveyor of any selected shelf, and other means adapted to remove and discharge said pallets from said elevator.

No. 1,440,769. Brick-Handling Machine. Joseph L. Cole, Oakland, Cal., patentee.

A brick handling machine comprising a constantly rotating driving element, a plurality of multiple brick carrying units, to which bricks may be successively delivered, adapted to be intermittently driven by said driving element, automatic

means for clamping said bricks in said unit and placing the unit in driving engagement with the driving element when the unit has been filled to its capacity, and means for automatically releasing all the bricks within said unit and simultaneously disengaging it from the driving element when the point of unloading has been reached.

No. 1,442,589. Building Tile. James Whittall, Hillside, N. J., patentee.

A tile having chamfered top and bottom edges a loop at the top edge, and a bendable strip embedded at the bottom of the tile, the strip having a projecting part to be sent into engagement with the tile below.

No. 1,444,167. Brick. Richard B. Cooper, New York, N. Y., patentee. Patent assigned to Fiske & Co., Boston, Mass.

A channel brick of the kind described comprising a plurality of wall sections and a central area connecting the same together, mortar grooves in each wall section, and an overhanging finger grip on the inner edge of each wall section to constitute an eccentric handhold for the brick.

No. 1,444,206. Apparatus for Unloading Kilns by Hopper. Raymond C. Penfield, New York, N. Y., patentee.

Apparatus of the kind described, comprising a brick-carrying hopper, adapted to be positioned adjacent a stack or brick, rods adapted to slide on said hopper and extend forwardly thereof over the stack of brick; means on the outer ends of said rods to separate a predetermined mass of brick from the stack, and means to retract the rods and thereby slide the mass of brick thus separated into the hopper.

No. 1,444,207. Apparatus for Unloading Kilns by Conveyor Belts. Raymond C. Penfield, New York, N. Y., patentee.

Mechanical brick handling apparatus of the kind described, comprising continuously moving brick engaging devices adapted to separate a plurality of brick in a stack, and to move the same from stacked position, comprising means to maintain the brick engaging devices in a substantially vertical line while entering the plane of the brick to be removed.

No. 1,444,220. Brick Kiln and Method of Setting and Burning. William J. Sullivan, Chicago, Ill., patentee. Patent assigned to American Equipment Co., Chicago, Ill.

That improvement in the art of burning brick which consists in building a kiln with relatively narrow arches and substantially twice the number heretofore employed supplying heat to each arch in desired amount to bring the kiln to initial temperature, then reducing the heat in each arch to prevent overburning of the arch brick and maintaining said reduced heat until the burning is completed.

No. 1,443,349. Machine for Forming Refractory Molds. Patrick Cooke, St. Louis, Mo., patentee.

A machine of the class described, comprising vertical side frames; a horizontal platform secured to and supported by the said vertical side-frames; a flask or container detachably secured to and supported by said horizontal platform; a cross-head loosely mounted to slide axially between said vertical side-frames; gear-wheels mounted to revolve between the upper and lower sections of said cross-head; a vertical and circular shaft for driving said gear-wheels; a vertical packing-head shaft having its upper portion mounted to revolve in aligned bearings formed in the upper and lower sections of said cross-head; a packing-head mounted upon the lower portion of said packing-head shaft, to pack the sand or other material in said flask or container; and a non-rotating die or core arranged to be dragged after said packing-head out of the packed sand or other packed material as the mold is gradually packed.

TRADE-MARKS AND DESIGNS PATENTED.

No. 169,046. American Refractories Co., Pittsburgh, Pa. Trade-mark registered for name "Arco" for refractory bricks, and special shapes of clay, tile and brick.

No. 169,047. American Refractories Co., Pittsburgh, Pa. Trade-mark registered for name "Arcofrax" for refractory bricks and clay tile.

No. 169,666. Acme Brick Co., Danville, Ill. Trade-mark registered for brick and clay tile goods.

THE CERAMIST'S CORNER

This is a department which appears in The Clay-Worker from time to time dealing with practical and technical matters of especial interest to the ceramist. This month we publish the review of various matters pertaining particularly to the interests of manufacturers of the higher grade ceramic ware, discussed at the New Jersey Clay Workers' Association Convention.

Casting of Ceramic Bodies—Oil Firing of Kilns.



AT THE ANNUAL MEETING OF THE New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, New Brunswick, N. J., in December, referred to briefly in THE CLAY-WORKER, two primary topics were up for discussion, Casting of Ceramic Bodies and Oil Firing of Kilns, arranged as symposiums at the morning and afternoon sessions, respectively.

Casting of Ceramic Bodies.

Considering briefly the proceedings regarding the subject of the Casting of Ceramic Bodies, this discussion made clear the success now attending this method of production in different plants, and indicated that it is a coming phase of pottery manufacture that cannot be neglected nor ignored.

That there are a variety of methods and variety of ideas now prevailing regarding practical casting in the pottery, was shown clearly at the meeting. Andrew Foltz, president of the Lambertville Pottery Co., Lambertville, N. J., manufacturer of sanitary ware, said that he had visited a large number of plants in all parts of the country devoted to this branch of manufacture, and in the majority of cases, the scheme of getting the slip to the casting shop was individual with the respective potteries.

Consequently, when Mr. Foltz installed a system at his own plant, he departed from the different plans as recommended by others. This consists of an iron tank below the floor level, with regular plunger, equipped with air pump, gauge and pipe. After the slip is dissolved in the tank, the air pump, 5x7-in., is used for forcing the material through the shop, for a distance totaling about 300 ft. There is no agitator, and the slip is not full of air, as might ordinarily be expected. The system is really of the return type, and the slip, as desired can be blown back into the plunger.

The equipment is in service on an average for only about an hour a day, in this time furnishing the full requirements of the plant. The tank usually is pumped to about an 85-pound pressure, and does the work very successfully at this point. The air pump is of automatic type, shutting off when the air pressure is sufficient, and starting up when the pressure drops. The gauge is in the form of float, extending above the floor and indicating the amount of slip in the tank. The equipment installation and operation are very simple, very effective and very economical.

Eric Turner, Trenton Flint & Spar Co., Trenton, N. J., gave an interesting resume regarding the casting of grog bodies. He stated that a cast sagger will carry the load better than either a hand-made or machine-made sagger, and although it may cost a few cents more, it is well worth it. The cast sagger has greater bearing properties, and these can be attributed to the greater density of the body; the casting process allows each piece of grog coming into contact with those surrounding it, thus forming a rigid skeleton, bound together by the clay content.

A satisfactory mix for general and sanitary ware was given as equal parts of clay, plastic fire clay, ¼-in. grog, and ⅛-in.

grog, with water, water glass and sodium carbonate in smaller proportions.

C. S. Maddock, Thomas Maddock's Sons Co., Trenton, N. J., explained briefly the system in use at the plant of this company, specializing in the production of sanitary ware. A Wainford-Darling outfit, with certain modifications, is being employed with highly successful attainments. A pressure valve has been installed on the apparatus, and a return system provided. The feed pipe extends through the shop, with the return line leading back to the agitator. The slip is delivered to every man by a hose, and the present working force, thus supplied, totals about 60 men in the different shops.

Leslie Brown, Lenox, Inc., Trenton, manufacturer of fine chinaware, spoke of the casting system in service at this plant, used for all specialties from hollow ware to jigger ware. The original casting slip is ground in a ball mill and the water measured accurately; the clay is ground to a specific number of revolutions to insure uniformity of grade. Within an hour of the finish, an electrolyte is used until the completion of the grinding. Then an air pressure is applied to the cylinder and the slip forced through the lawn into the storage agitators. From these agitators, it is pumped through the shop for casting purposes, or for a total distance of about 500 ft.

Frank Dinsmore, Imperial Porcelain Works, Trenton, N. J., gave some interesting information on the casting of electrical porcelain products. This plant is using such method for the production of pieces 2 and 2½-in. thick, 25 to 26 in. long, and 7½ to 8 in. in diameter, with corrugations the full length, and is having practically no loss through cracking. This is done by the open mold casting method, and which method is the only one, it was stated, that is susceptible to handling the variations in thickness. The water content in the clay was referred to as a very important matter, and the necessity for compressing it to a low point in connection with the slip.

Oil Firing of Kilns.

One of the most interesting and instructive addresses presented on this subject at the meeting, was by Francis W. Walker, Jr., Beaver Falls Art Tile Co., Beaver Falls, Pa. He said that the company's experience with regard to oil fuel up to the present time had been with continuous glost firing.

Comparing gas with oil when burned in a tunnel kiln fired to Cone 1 over a considerable period showed a relative value of 27 per cent increase with oil burning, figuring oil at 142,000 B. T. U. per gal. as 1 to 1.27. There will likely be considerable time and money expended, it was stated, before the thermal efficiency of oil can be made to approximate that of gas and coal.

By assuming the thermal efficiency of all three fuels mentioned to be the same, a comparison of the cost, as well as all labor, maintenance and sagger breakage charges, readily can be secured. For a typical month, the labor charges amounted to 5.65 hours per ton of coal fired, or \$2.72 when taken at the average rate of 48.2 cents per hour prevailing through the month; in the case of gas, the time necessary to be expended per 28,000 cu. ft. of gas consumed would have amounted to 2.04 hours, or at a rate of 52 cents, the cost would be \$1.04. The

cost of oil would be the same as that for gas (\$1.04), as the conditions are practically identical.

The maintenance charges in the case of coal are found to be \$1.42 per ton, and in the case of gas, 24 cents per 28,000 cu. ft., or one-fifth that of coal. As for oil, a conservative value is to be secured by doubling the maintenance charges for gas, with the addition of \$5.00 per kiln for power and machinery maintenance, bringing a total of 87 cents per 197 gals. of oil fired.

With regard to sagger breakage, in the case of coal this is found to be \$2.95 per ton; for gas, the breakage averaged 41 per cent of that for coal, and the cost, \$1.22 per 28,000 cu. ft.; for oil, the breakage was 25 per cent higher, or 52 per cent that of coal, amounting in figures to \$1.53 per 197 gals. of oil fired.

Following a careful study of the problem over a period of time, it is found that the average costs of firing show oil to be the most expensive, with gas next and coal last.

The economical use of oil depends to a large extent upon being able to store it in quantity, preferably for a period of 6 months, as by purchasing at the right time, sufficient saving can be effected to pay for the cost of the tankage.

As to the effect of the fuels upon the quality of the finished ware, the opinion was expressed that with very few exceptions, equal results can be secured with each fuel. Equally good ware can be had with either coal or gas, and this is likewise true of either oil or gas.

R. L. Clare, Federal Terra Cotta Co., Woodbridge, N. J., outlined the installation for oil burning at this plant, and spoke of the efficiency of the system. In firing oil, it is necessary to have the flame impinge upon some material which becomes highly heated and thereby assists the proper combustion of the oil in the fire box of the kiln. It would be very difficult to keep the fires burning steadily in the early stages of the burn if it were not for these hot baffles; as the burn progresses, these baffles are subjected to very high temperature and accordingly must be renewed frequently. This is where the refractory sand baffle has the advantage.

The equipment necessary to use oil fuel at the ceramic plant was itemized as follows: (1) Requisite tank storage, 25,000 to 100,000 gals. capacity, with heating coils to keep the oil fluid; (2) Two small oil pumps; (3) Small intermediate tank to reduce pulsations from the pumps; (4) Air compressor or blower; and (5) Burners and piping. In the case of the pumps, two are provided to have one in reserve at all times.

With regard to the relative economy of oil fuel as compared with coal, it was set forth that 1 ton of coal at 13,500 B. T. U. per pound gives 30,240,000 B. T. U. A fair grade of fuel oil contains 140,000 B. T. U. per gal. Therefore, it would require 216 gals. of oil to equal the thermal content of 1 ton of coal. In actual service, this figure would be improved, particularly in kiln burning. Oil may be burned with much less air excess than with coal on account of the better control and more uniform conditions. There is no opening or closing of fire doors, no cleaning of fires with the attendant losses in cooling the fire boxes, no change of grate bars and no loss in ashes. All of these savings tend to reduce the amount of oil necessary to equal 1 ton of coal. Under average conditions, it would be impossible to make 150 gals. of oil do the same work as a ton of coal.

Donald Hagar, Mosaic Tile Co., spoke at length on the use of oil fuel at the kilns, and the consequent advantages. The two important factors to be watched carefully are the atomization of the oil, and the amount of air admitted to the burners. The atomization, he pointed out, was highly essential, as the effect of poor atomization is to facilitate the formation of carbon in the fire boxes, and produce incomplete combustion.

Such a condition can be avoided with the proper control of the temperature and pressure.

Listing the advantages of the use of fuel oil, these were stated as:

(1) Produces a more intense heat, thus cutting down the burning time; (2) The kiln is more easily regulated, giving a uniform burn; (3) Less labor is required; (4) Less space required around the kilns; (5) Cleaner kiln shed; (6) Smaller storage space necessitated; and (7) No strikes to interfere with the fuel supply.

It was set forth that oil produces a flame far more intense than that secured by the use of either coal or gas, and makes possible the burning of kilns in less time, particularly so in the case of large kilns with bulky ware. Oil allows a regulation of the flame not possible with coal, and no trouble has been encountered in obtaining the proper heat at the bottom or centers of kilns. It was also stated that saggings have a longer life when oil is used for firing.

John A. Williams, Mitchell-Bissell Co., Trenton, N. J., manufacturer of porcelain specialties, explained in detail the installation at this plant for the use of fuel oil. This consists of a 20,000-gal. tank, 2 oil pumps, 2 air pumps, 2 strainers, and auxiliary apparatus. All equipment has been provided in duplicate for emergency service. Each kiln is equipped with 6 burners.

The ware produced at the plant is accomplished in a single fire, burned to Cone 12, both body and glaze being fired at the one time. The products are of highly vitrified character. The system is designed for medium pressure oil, about 30 pounds, and the air pressure correspondingly low, from 3 to 4 ounces. The system is economical and very satisfactory.

One man handles 3 kilns at the pottery, not simultaneously, but this would be possible, if necessary. During the so-called smoking period, the burn averages about 3 gals. of oil per burner per hour. This gives a low heat which is increased gradually, and about 1,000 deg. is attained during the first 10 hours. From this point the oil consumption increases until it reaches 5 to 6 gals. per hour for a period of 20 to 30 hours, carrying the temperature to around 2,000 deg., and which is reached by maintaining an average increase of about 50 deg. per hour.

Pyrometers are employed for kiln control, and these are considered as absolutely essential for good burning. Advantages have been secured through the use of two different sizes of tips on the oil burners, a small one being used as the burn commences and continued until it reaches its maximum. Figures compiled at the plant show that on a 13-ft. kiln, using 6 burners, with an average burning of about 44 hours, the consumption aggregated approximately 1,760 gals. of oil for each burn. The fuel used is 35 to 40 deg. Beaumé, about the highest grade of oil that can be secured for this purpose.

G. M. Tucker, New York Architectural Terra Cotta Co., spoke briefly on the benefits to be derived from the use of fuel oil in the ceramic plant, and the installation at the company works. Five tanks are in service, with capacity of 10,000 to 25,000 gals. A small duplex oil pump, steam-operated, is used to draw the oil from any one of the reservoirs and distribute it to the kilns. An internal mixer type of oil burner is used, in which the oil and air or steam mix prior to leaving the nozzle. Compressed air is used as the atomizing agent, while the fuel oil is from 18 to 20 deg. Beaumé. The equipment is installed in duplicate to eliminate any possible interruption in operation.

The operation has been entirely successful, showing efficiency in labor and economy in running expense, while the quality of ware is as satisfactory as could be obtained with any character of fuel.

Written for THE CLAY-WORKER.

WITH THE GEORGIA CLAYWORKERS.



MAJORITY OF THE BRICK PLANTS throughout the southern field are now at capacity operation with volume of business the best it has been in some years, and the outlook giving promise that 1923 will prove one of the most prosperous years in the history of the industry in the South, in the opinion of several of the leading manufacturers having headquarters in Atlanta, who advise The Clay-Worker scribe their plants are, for the most part, sold ahead from 30 to 60 days with new business pouring in rapidly.

A continued period of construction activity over the entire district accounts for the good business being enjoyed, as practically all of the important southern cities are doing more building than they have in a good many years. Though new building records were established in 1922 by many of the larger cities in the section, indication at present portend an even greater activity throughout 1923. Atlanta is looking for a \$25,000,000 building year, which would be about \$3,000,000 above last year's volume, and 1922 was the biggest year in the city's history. A majority of this construction is of office buildings, schools, factories and factory additions, churches, etc., principally in brick.

The freight situation has caused some trouble the past month or six weeks, but it has improved considerably of late and manufacturers, for the most part, are now able to secure empty cars without much trouble.

At present a great deal of importance attaches to the outcome of the recent freight rate hearings that were held in Atlanta and other southern cities by the Interstate Commerce Commission. During the Atlanta hearings in mid March a majority of the larger brick companies of the district had representatives present to plead their cause in opposition to the higher freight rates that the railroads are seeking, and a mass of important testimony was introduced. The railroads wish to operate on a flat mileage basis, and so far as brick and other burned clay products are concerned, this would mean an increase over the present freight rates of approximately 25 per cent, and, of course, a resultant upward tendency in prices. The brick manufacturers presented to the commission a new schedule which, if accepted, would make the rates about the same as they are at present, and the consensus of opinion is that the commission will likely act with favor on the latter schedule.

Another tangible evidence of business improvement is noted in the fact that there have been an unusually large number of new brick and clay products companies formed in this section the past five or six weeks, some of the larger ones of which are listed in this issue of The Clay-Worker. Another evidence is the improvement in export demand, southern manufacturers stating they are now experiencing an excellent trade in this regard, principally with the Latin-American countries. As a whole indications promise that 1923 will be about the biggest export year the industry has even enjoyed in the southern field.

Ceramic Engineering Course in Georgia.

Georgia is known to have vast clay and ceramic resources that, if developed, would make the state one of the great leaders of the nation in this regard, and in order to bring about the development of this industry a group of the brick manufacturers and others affiliated with the industry throughout the state, have perfected plans for the inauguration at the Georgia School of Technology in Atlanta, of a ceramic engineering school.

Representatives of the above industries met in Atlanta in

mid March and made this plan, and hope to get the course started at an early date. At the same time a state-wide organization of the industries interested was perfected, including in its membership many of the leading brick manufacturers, state officials and members of the state geological department. B. Mifflin Hood, president of the B. Mifflin Hood Brick Co., of Atlanta, was named general chairman of this organization, while Dr. T. Poole Maynard, a well known Atlanta geologist, was named chairman of the committee on information of Georgia clays.

Another meeting is planned to be held during April, at which time there will be a further discussion of the engineering school, and plans for its establishment definitely completed.

Many New Industries Formed.

Among the new brick companies that have been formed in the Southeast the past thirty days are the following:

The Meadow Brick Co., incorporated with \$25,000 capital at Four Oaks, N. C., has a plant with a daily capacity of 50,000 to 75,000 brick, it has been announced by J. W. Sanders, who is president of the company. W. H. Smith, secretary and treasurer.

A. E. Venable, of Rockwood, Tenn., is planning the early establishment near that place of a new brick plant having a daily capacity of about 50,000 brick. A site for the plant has already been secured, and it will probably be operating early this spring.

The Florida China Clay Co., Inc., was formed in March at Leesburg, Fla., with \$100,000 capital, and will establish there for the production of clay of various kinds. R. L. Fox is president.

The Woodtex Co. was incorporated at Kissimmee, Fla., the latter part of March with a capital stock of \$100,000, and according to its charter application, will establish a plant at that city for the manufacture of brick and other clay products. Patrick Johnson, of Kissimmee, is named president of the new company.

The California Tylite Co., manufacturers of building tile, is planning the establishment in Atlanta, it is reported by the Atlanta Convention Bureau, of a branch plant. It is said the branch will represent an investment of about \$200,000.

The Russell Clay Manufacturing Co. was formed at Birmingham, Ala., with \$100,000 capital, by L. R. Russell and associates.

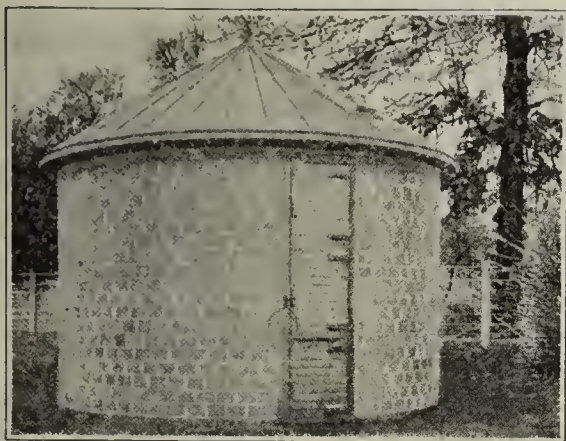
Home Exposition in Atlanta.

Leading Atlanta brick manufacturers have obtained space for the annual "Own Your Home" exposition to be held in Atlanta the latter part of April, and will feature brick, its stability and beauty, for use in the construction of homes. Among the manufacturers and dealers who will take part are the B. Mifflin Hood Brick Co., F. Graham Williams Brick Co., Keeling-Cassidy Brick Co., and V. H. Kriegshaber & Son.

The B. Mifflin Hood Brick Co., of Atlanta, advises that it has changed its plant at Rome, Ga., from common brick to rough texture brick. This plant is known as the Georgia Brick & Tile Co. The Hood Company also is in steady operation now at the plant of the Rome Fireproofing Co., which it recently acquired, manufacturing impervious face brick. About \$50,000 was invested in making improvements to the latter property.

W. Jordan Massey, president of the Bibb Brick Co., of Macon, Ga., and for many years one of the state's well known manufacturers, was elected president of the Southeastern Portland Cement Co., formed recently at Macon, Ga., with \$3,000,000 capital. He will continue actively in the brick business, however, but at the same time will devote considerable of his attention to the new position.

P. O. D.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

HOLLOW TILE AND THE HOME.

It is an interesting and significant fact that in the inquiries received from advertising done by the Hollow Building Tile Association, 90 per cent of the answers, more or less, are interested in home building and are making inquiry about hollow tile in connection with plans for new homes. The significance of this is in that it demonstrates clearly that prospective home builders are looking around and making inquiry so they may understand better what is the ideal or most desirable material for home building. Out of this should come not only progress in the sale of hollow building tile for home purposes, but it should do two additional things of merit. One is to help turn the attention of home builders toward clay products as the best building material and this will include a consideration of brick. The other is that when the home builders become interested in hollow building tile and know more about it, it will be paving the way to a more extensive use of hollow building tile for out buildings, both in the city and on the farm.

MEMBERSHIP WORK.

It is a compliment both to the merits and activities of the Hollow Building Tile Association and to the earnest and effective work of its membership committees to note that they keep adding new members and growing steadily toward that 100 per cent mark. A recent report of the membership committee included the following list of new members:

North Iowa Brick & Tile Co., Mason City, Iowa.
Lythe Tile Corporation, Buffalo, N. Y.
Suburban Brick Co., Moundsville, West Va.
Crystal Springs Clay Co., Kimballton, Iowa.
National Clay Works, Mason City, Iowa.
Klose Brick & Tile Co., Lincoln, Nebr.
Western Brick & Supply Co., Hastings, Nebr.
Audubon Brick & Tile Works, Audubon, Iowa.
Tramp Brothers, Creston, Iowa.
Dexter Brick & Tile Co., Dexter, Mo.

INTEREST IN FACE TILE.

As an evidence of the interest of prospective builders in hollow building tile making its own face, the following is quoted from an inquiry reported by the Hollow Building Tile Association.

"I wish to build a Farm residence to cost around \$8,000 of mat-faced hollow tile (rough faced), also a dairy barn of latest improved type for about twenty-four cows, of the same material.

"Can you furnish illustrations or plans of these? Under-

stand, I do not want a stucco finish over Hollow tile. I want to use that tile that has a finished face. Do you recommend this type of tile?"

It is only of late years that we have awakened to the possibilities of using hollow tile for wall construction and having it make its own face. And even today there are those in the hollow tile business who seem to have doubts in the matter, partly because they have never seen the architectural possibilities developed in hollow tile face, and partly because of the matter of shrinkage in drying and burning which creates some irregularity, and out of it some uncertainty in the minds of even manufacturers as to the practicability of the hollow tile wall making its own face. Meantime there is plenty of evidence of interest and inquiry on the part of prospective builders who see decided advantages in hollow building tile for structural purposes provided it can be so made and used as to furnish a complete wall with a face feature that is attractive.

In the face of this it is plainly up to those interested in promoting a wider use of hollow building tile to carry on with experiments and research work until they know positively what is what in the way of practical face possibilities in hollow tile work. There are questions being asked here that should be answered, and if they can be answered in the affirmative it should mean a bigger field and a better development for the hollow building tile industry.

THE MID-WINTER RECORD.

FIGURES COMPILED by the Dodge Service on building contracts awarded in the 27 states in the northeastern part of the United States show a wonderful mid-winter record in building operations. The total for January, 1923, in this territory was \$217,333,400. This is just about double the normal or average through a period of ten years, and it is a little better than three times the average for January, ten years ago. Indeed, it is four times the record of January, 1914, the total for the first month that year being only \$51,102,000. Only once before has the mid-winter record of this year been exceeded and that was only a slight amount in 1920. The era of prosperity this winter building has brought to us should beget a spirit of determination to keep the good work going and not that spirit of greed in the way of higher prices and wages which threatens to bring on a reaction comparable with the happenings of 1920.

The hollow tile people have invested quite a sum in widespread advertising in the past with good results, and now they are investing a large part of this fund in field work, which promises even better results.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

WORK OF PROPER GANG.

QUESTION: What is a proper gang to set hollow building tile and how many tile 5x8x12 should they set per hour?

Answer: One transfer man, two tossers and two setters generally fill a 30-ft. round kiln for a day's work, set 11 high, and they are often through about 3 o'clock.

CORRECT NUMBERS OF DECKS FOR DRIER CAR.

QUESTION: How many decks should a drier car have for hollow building tile?

Answer: As building tile are made mostly in 12-in. lengths they can be set two high on the lower deck and two high on the upper deck we do not see any advantage to having more decks, as it takes longer to fill the cars and longer to unload at the kilns and there is risk of wrecking the cars in the drier by loading too high.

DIAMETER OF KILNS FOR HOLLOW WARE.

QUESTION: What is the most practical diameter of kiln for hollow building tile?

Answer: From our experience we believe a 30-ft. kiln is the most economical for that size, but for larger sizes a kiln can be up to 40 ft. in diameter and with enough furnaces good results can be obtained, providing the heat distribution flues are correct. Only when building such large kilns the kiln walls should not be more than six feet high to the spring of the crown for the rise of the arch must be figured one-fourth of the diameter of the kiln, otherwise the setting space would be too high and would form a heat reservoir above the ware. Such large kilns should have at least 12 furnaces of the horizontal grate bar type, 2½x4 ft. grate area and the arch should be not less than 40 inches from the grates or you would heat up the furnaces and kiln wall instead of the heat going into the kiln where it belongs.

MORE ABOUT SOOT TROUBLES.

QUESTION: Replying to your letter from your Mr. Carey P. Ellis, in reference to kilns choking with soot, I would like for him to go more fully into detail just how to build a box of brick on the furnace grate bars, so as to get a big bed of coals or coke.

My kilns have twenty eyes to the side, twenty one feet across inside, I set fifty high, dry in open sheds. The furnaces are 5 feet long with a grate bar space of 1x2 feet, the balance is filled level with the bars. The ash pits run the length of the grates two feet.

I use gas house coke, burning about four days with the

dampers open and the balance of the coking with the dampers up, generally burn about fifty tons in the six days. I then go on Western Kentucky nut coal and seldom show signs of smoking back at the furnaces until the third or fourth day.

Wouldn't it be practical to use a big bed of coke on the grates and the dead space, without building the box of brick?

In my previous letter I especially asked how some of the plants, using my kind of kilns, manage to watersmoke with coal, using no coke or wood. I also know that it is possible to make an entire burn using nothing but slack coal, by some of the forced draft systems.

Kindly give me us much information in detail about drying out with coke as you can.

My brick are set 13 over 5. I may have had my platting too tight, not taking out enough to give it a free draft. I make it a rule not to put back the platting until the places are burned out clean.

Answer: I understand from the above query that his furnaces are one foot wide and five feet long, with grate bars two feet long which leave a dead space of three feet back of the bars.

This is a very unsatisfactory furnace and I am wondering if it is correct. If it is, it will account for most of his trouble.

The dead space is not grate area but just a smoldering pit to develop unburned gases to soot the bricks.

He should cut out the dead space and use five foot grates unless he will entirely rebuild the furnace.

With five foot bars he can lay loose bricks across the bars, back two feet from the mouth of the furnace and this will form a box in which he can maintain a small hot fire with coke for the water-smoking.

When the danger of sooting is over, he can rake out the loose bricks, and spread the fire the full length of the furnace and bring up the heat as rapidly as the bricks will stand.

I really think his chief trouble is that he sticks too close to his home plot. He should get around and see what others are doing, and profit by the trip. Even his competitors will be glad to see him and help him. This is characteristic of brickmakers, and such open handedness is found in no other industry.

CAREY P. ELLIS.

KILN TROUBLES.

QUESTION: We make clay drain tile one foot long, have a down draft kiln, and a pyrometer; our neighbor, in the same business, has more uniform burned tile than we have, their tile are all very uniform. Our neighbor's kiln is one foot less in height than ours otherwise our kiln is built just the same as theirs.

In our kiln the tile that are set close to the furnace pockets after they are burned are quite black, and shrunk more than the tile in the center of the kiln.

We set twelve courses tile in our kiln; from the sixth course up the tile are burned nice and red, but some are black as said, and in the six lower courses, some of the tile are red, and some are a little pale. We are anxiously trying to find a way to remedy this.

Would there be a way to set the tile in the kiln, that they would be burned more uniform?

Answer: One foot greater height in the kiln will make some difference in the results but not the wide difference described by your correspondent.

It may be that the clays are not alike, that the competitor's clay has a longer burning range which enables him to hold the heat in the top of the kiln without damage to the top tiles, until he can work the heat to the bottom and thus get quite uniform results.

Assuming that the kiln floors are fully perforated there

is nothing to be gained by changing the setting. On such floors the tiles are usually set tight to give better support, but if the floors are the solid or semi-perforated type, it is often necessary to set the bottom course open to permit the water-smoke to escape to the draft spaces.

If the kilns are alike and the clays are alike, the trouble is in the burning. One who does not understand burning, or who is careless in the burning, will get poor burns in any type of kiln with any clay, whereas a good burner will get pretty good burns in a poor kiln.

Many burners believe that they should have a strong draft during the final stages of the burning to "pull the heat to the bottom." This is a great mistake. The stronger the draft the more certainly you will overburn the top without getting the heat to the bottom. If with this strong draft you keep the furnace mouths filled with coal, assuming the furnaces are the grateless or inclined grate type, thus getting reducing conditions, you are taking the surest method of over-burning the top and getting black tile. The reducing gases give higher temperatures than oxidizing conditions not because they are reducing but because under reducing conditions we more nearly approach theoretically perfect combustion as a rule than with excess air. Besides the reducing conditions take oxygen from the minerals in the clay and under such conditions fusion progresses more rapidly. If the clays are alike then the black ware in one yard is due to reducing conditions, improper firing and faulty control of the fires, too much draft without control.

The burner must get the notion out of his head that he can pull the heat to the bottom and that he must keep up the fires to produce this heat. The only results he can get in this way are bad results.

The heat must be pushed down and while this pushing is going on the fires must be just a bit lazy—not too lazy because we must hold the top heat but not increase it.

The only way to push the heat down is to check the draft, and at the same time we must lighten the firing and keep some air going in over the top of the coal.

The pressure is the atmospheric pressure outside the kiln, pushing its way into the kiln to replace the gases passing out the stack. If we check the movement of the gases, we lower the resistance to their movement through the kiln and this lessened resistance is converted into pressure which serves to spread the heat to all parts of the kiln.

In other words by checking the draft we convert velocity pressure into static pressure which spreads the heat.

The increased pressure in the kiln is evident from the outward pressure at the peep holes and from the furnace mouths. We do not wish to go too far with this increased pressure within the kiln—not to the extent of getting volumes of smoke rolling out of the furnaces but just to the degree that there apparently is no air going into the furnaces nor smoke and gases coming out of them. A balanced draft, if you please.

When the draft is checked the burner must look well to his firing. If it is too heavy the heat will rapidly jump up in the kiln and the top ware will be damaged.

He should hang up a sign—a mental one at least—in effect that during the final stages of the burning the heat must be held uniform in the top of the kiln and steadily pushed to the bottom of the kiln. If this sign is obeyed it will enable him to get the heat to the bottom of the kiln without damage to the top.

It is next year that we are to have the big political pot boiling, but some fires are being lighted already and there is some simmering to remind us that coming events may cast shadows—and other things—before them.

BUILDING INDUSTRIES EXHIBIT AT PHILADELPHIA.

AN EMBRACING and authoritative display of architecture, building and building materials will form a considerable part of the Philadelphia Palace of Progress, a civic-industrial exposition to be held in the Commercial Museum, May 14-26, to celebrate the 240th anniversary of the founding of Philadelphia. The exposition will represent the civic, municipal and industrial advancement of Philadelphia.

The exhibit will occupy a large section of the exposition and has been designated "The Architectural and Building Division."

Mr. D. Knickerbacker Boyd, of the firm of Boyd, Abel & Gugert, architects, has consented to act as director of this division. Mr. Boyd has served as secretary and vice-president of the American Institute of Architects, president of its Philadelphia Chapter, and during the war, as chief of the Building Materials Information section of the U. S. Housing Corporation.

Mr. Boyd has secured the co-operation of a number of architects, engineers and builders in arranging the plans for the exhibit. Among those who have accepted are: Victor D. Abel, Walter F. Ballinger, John I. Bright, Irwin T. Catharine, Francis A. Gugert, Philip H. Johnson, Albert Kelsey, Charles E. Oelschlager, Oliver Randolph Parry, Andrew J. Sauer and Clarence E. Wunder.

It is Mr. Boyd's plan to arrange the exhibits of architects, builders and dealers in building materials, equipment and devices in such a way as to form an artistic and comprehensive exhibit representing the advancement of industrial, home and institutional construction in Philadelphia.

One of the most effective features of the architectural and building division will be a complete model home, to be erected by a prominent Philadelphia builder under the direction of Mr. Boyd. The home will be outfitted by Strawbridge and Clothier, a leading department store of Philadelphia, and it will be occupied during the two weeks of the exhibit by a young married couple, who will act as hosts for the Philadelphia Palace of Progress.

Another feature of interest will be a "Service of House Owners," in which will be displayed charts and figures to guide home owners and prospective home buyers.

CELEBRATE WEDDING ANNIVERSARY.

Mr. and Mrs. Samuel Geijsbeek, of Seattle, Wash., celebrated the twenty-fifth anniversary of their marriage, April 5, with dinner at the Gorman Hotel in that city, to which a large number of their friends were invited.

ROOFING TILE MACHINERY WANTED.

Bernard L. Rowe, 320 Vine Street, N. E., Washington, D. C., is in the market for a hand or power press for roofing tile, both plain and S shaped, with a capacity of from two to four thousand per day.

WEST BROS. BRICK CO. SUIT AGAINST U. S. HOUSING BOARD DISMISSED.

The suit for breach of contract brought by West Bros. Brick Co., of Washington, D. C., against the United States Housing Corporation for \$20,000 damages, long pending in the District Supreme Court here, has been dismissed. The suit was based upon the refusal of the Housing Corporation to accept 3,201,000 brick ordered of the West Bros. Brick Co. after they were made and delivered, the signing of the armistice intervening between the date of order and delivery.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



ENCOURAGING REPORTS are being received from dealers and manufacturers of clay products in Wisconsin over the prospects of the industry for 1923 business. Although storm conditions halted construction work during most of the month of March on the many building projects being carried on in Milwaukee and other Wisconsin cities, little damage was done. The delay will have no serious effect upon building plans, it is reported in construction circles. While weather conditions impeded outside work, engineers and architects throughout the city spent their time in developing plans for the many new structures contemplated in various sections of the city.

Building activity in the state has not been at a standstill. Construction work on the new million dollar hotel in Madison to be erected for the Wisconsin Hotel Co., will be started within a few months. Contracts for erection of a new hotel at Green Bay, to cost \$1,000,000 and be known as the Northland, will be awarded shortly. Excavation work is already under way. Plans have been drawn for the first unit of a \$200,000 grade school in West Allis.

Construction work in Milwaukee since the first of the year has totaled nearly \$5,000,000, of which \$2,216,222 was authorized in March. Last year for the first three months permits reached a total of \$5,779,443, but this included one single permit for \$1,700,000 for the Riverside pumping station. March was ahead of last year when permits amounted to \$2,208,509.

While wage increases are predicted in building circles for some of the building lines, this situation will not affect the bricklayers, who on Jan. 1 established a new scale of \$1.25 an hour over the scale of \$1, effective before that time. There are approximately 550 union bricklayers in Milwaukee. Masons who are now receiving \$1 an hour will receive \$1.25 an hour after June 1, this increase to effect about 1,500 masons of the city.

Statements that building costs had advanced from 30 to 35 per cent have been investigated by master builders of Madison and a report submitted for publication and public consumption of facts. It was reported that prices at this time compared with a year ago show an increase of only 8 to 11 per cent. While many items show advance from 8 to 20 per cent, others reduce the average. Brick, for instance, on the average shows no advance.

Milwaukee building material dealers also denied that there had been excessively high prices charged for their products as has been claimed in real estate circles. Brick, cement, lumber and millwork dealers denied excessive prices and also that a shortage of material in their lines exists in Milwaukee.

Clay product production in Wisconsin has for several months been greatly curtailed, many plants have been closed either for repairs or because of severe weather conditions. However, with prospects favorable for a good year plans are under way for resumption of production at capacity as soon as weather conditions permit, so as to be ready to take care of the heavy placements of orders which are now coming in.

Clifford F. Messinger, general salesmanager of the Chain Belt Company, Milwaukee, has been elected second vice-president of the company. Mr. Messinger has been with the company since 1911, as advertising manager, manager of mixer sales, and general salesmanager, successively. He is a director of the company and of the Interstate Drop Forge Company.

One of the most important happenings in Wisconsin clay manufacturing circles during the past month, and one which shocked members of the industry, was the recent death on March 15, of John Ringle, Jr., organizer and president of the Ringle Brick Company, of Wausau, Wis. Mr. Ringle was a charter member of the Wisconsin Clay Manufacturers' Association and served until recently as president of that organization. In January of this year Mr. Ringle declined reelection after serving several terms as head of the Badger Manufacturers' Association.

A. BADGER.

FIRE WRECKS SEWER PIPE MACHINE FACTORY.

The foundry and pattern shop of the Taplin-Rice-Clerkin Company, of Akron, Ohio, manufacturers of sewer pipe machinery, was wrecked by fire March 29th. The loss was quite heavy and it will be some time before they will be able to resume business as before the fire.

IDAHO COMPANY ELECTS OFFICERS.

At a recent meeting of the stockholders of the Idaho Fire Brick Company of Troy, Idaho, reports showed a splendid year, and an 8 per cent dividend was paid. The following officers were elected: C. V. Johnson, president; Ole Bohman, vice-president; J. B. Watson, general manager and treasurer; Miss Douhan, secretary. George Saad, W. M. Duthie and Niles Nelson, together with the officers named constitute the board of directors.

COLORADO CLAY MANUFACTURERS ORGANIZE STATE BODY.

At a general meeting of Colorado manufacturers of clay products held in Denver recently the organization of the Colorado Clay Products Association was perfected and directors and officers were elected. Among the purposes of the new organization are to assist in standardizing the products, further the interests of the industry in Colorado and to promote the use of clay products as the proper materials for building and other purposes.

The membership covers a large field and consists of the manufacturers of common brick, face brick, hollow and roofing tile, terra cotta, sewer pipe, flue lining, fire clay specials and various other products. Already thirty-five manufacturers in Colorado have joined.

The directors elected at the organization meeting are: H. G. Findley, Fort Collins; W. G. Buckles, Boulder; Fred Nichols, Trinidad; H. Bowen, Canon City; J. C. Welte, Pueblo; J. N. Schreiner, Paul Brown, J. Claire Evans and B. F. Merchant of Denver. The new officers are: Frank Ervin, Denver, president; Charles Flohr, Denver, first vice-president; Charles A. Gunning, Longmont, second vice-president; Frank Helwig, Pueblo, third vice-president; C. M. Deppen, Denver, treasurer; and George P. Fackl, Denver, secretary.

Meetings of the association will be held once a month in Denver and other cities. Plans are under way for the establishment of a permanent office in Denver and an exhibit room on a ground floor location. An executive secretary will soon be placed in charge of the active work.

Rent receipts are things that may buy a home—for the other fellow—but the way for the renter to profit is to build a home of his own.

That half of the world that used to wonder how the other half lived now has enough to do in figuring out how it is going to live on its present income.

KILN ACCELERATOR SPEEDS UP KILN TURN OVER.

IN this day and age when full steam ahead, capacity production means so much to the individual manufacturer equipment reducing duration of burn and speeding up kiln turnover fills a long felt want.

So we are glad to give wide publicity to a new device manufactured by the Manufacturers' Equipment Co., Dayton, O., styled the Meco Kiln Accelerator. This is rendering a wonderful service in the saving of fuel and in increasing the capacity of shortening the duration of the burn.

It consists of a multiblade blower and exhaust fan mounted on a carriage in combination with a kerosene or gasoline engine or electric motor to suit the power conditions of the plant where used.

When a kiln has cooled sufficiently to permit the removal of the door casing, the fan is attached and operated as a blower, forcing the heat out, and when the heat of the kiln has been reduced to 500° F. or less, the position of the fan can be changed and the suction pipe attached to the door casing. The fan is then operating as an exhauster, causing

rushing in, will make it most comfortable for the workman while setting.

Moreover, where waste heat dryers are employed, the accelerator can be attached to the kiln as soon as it has been cut off from the waste heat drying system.

The multiblade fan delivers 5,000 cubic feet of air per minute with but an actual power requirement of 2.19 h. p. This provides a larger volume of air for both blowing the hot air out of the kiln after it is burned, and also for accelerating the burning during the watersmoking period, so due to the less burning period and cooling time made possible by the Meco accelerator the investment is paid back in short order.

The U. S. Brick Co., of Tell City, Ind., is one of the satisfied users of the accelerators. They credit it with increasing their monthly production 16 2/3 per cent.

The Canton Brick and Fireproofing Company, New Philadelphia, Ohio, state that the accelerator gives them a gain of two days in the turnover of their kilns.

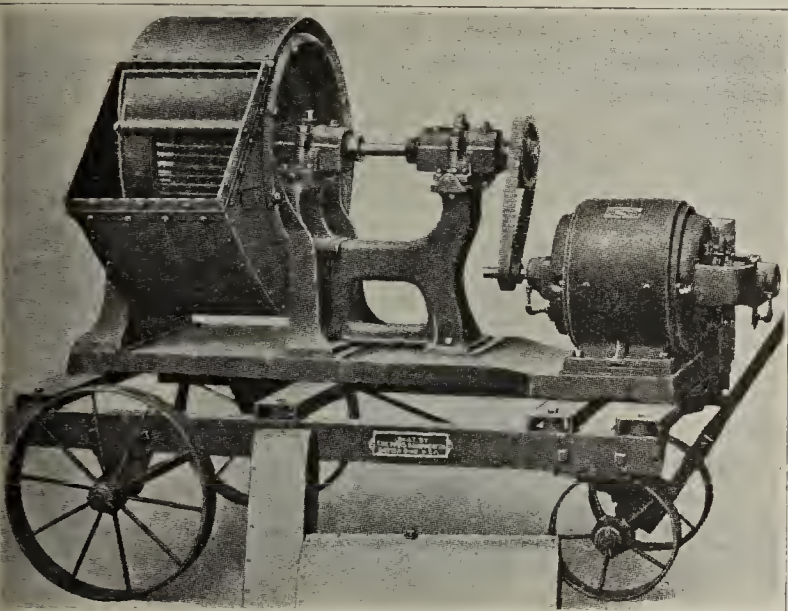
The Peebles Paving Brick Company, Portsmouth, Ohio, declare that the use of the accelerator has saved them practically five days' time in burning, which enables them to greatly increase their capacity as well as make a saving of a large amount of fuel.

The B. Mifflin Hood Brick Company, Atlanta, Ga., has the following to say: "We are now using the Meco Kiln Accelerator which we purchased for our Georgia brick and tile plant at Adairsville, Ga., and find that same is helping us wonderfully in increasing our output. Prior to the time that we purchased this fan we lost from five to seven days every month due to running up on hot kilns, but our kilns have taken care of our output without a single interruption and we believe it is conservative to state that the fan has already paid for itself. We are using this fan in blowing cold air upon the hot ware in a continuous kiln similar to the Haigh Continuous, but not the Haigh in every detail, and we find that we are able to unload the brick from kiln much sooner than we have in the past and in some instances the writer has been in the kilns himself and touched the kiln walls, much to his regret, whereas the men were handling the ware without even the use of gloves."

The Meco Kiln Accelerator is manufactured by the Manufacturers' Equipment Co., see their advertisement on pages 436 and 437 of this issue.

BRICK COMPANY AIDS TOWN IN BUILDING CAMPAIGN.

A. P. Green, president of the A. P. Green Fire Brick Company at Mexico, Mo., has secured the services of architects to draw up plans for the erection of 25 homes for the use of his employes and also as a means of solving the housing shortage in Mexico. Recently the Chamber of Commerce of that city negotiated a campaign for a fund of \$15,000 to be paid Mayor J. W. Gallaher as a bonus for erecting 60 homes in that city at a cost of \$150,000. Mr. Green gave liberally to that fund, but he declared at the time that he did not expect any houses to be built for the use of his laboring men out of this fund. Furthermore, he added that if the campaign was a success he would spend a least \$25,000 himself for the erection of homes for his men and the drawing of the plans is the first step in that direction. The date for the construction of the houses has not been decided upon, but Mr. Green said he expects to start as soon as the plans are completed. The houses will be conveniently placed regarding the company's plant so that the men and their families will be near their work. They will be of different sizes to accommodate men of various sized families and earning capacities.



Meco Kiln Accelerator.

cold air to rush in at the door and other openings, carrying the heat away from the ware, and producing a comfortable condition for unloading the ware, which would otherwise be prevented by the heat of the kiln. Through such usage, kilns may be cooled and emptied in from two to three or even four days in advance of the time otherwise required through the process of natural cooling.

There is a second advantage to the end that the accelerator may be attached to the draft flue of down-draft kilns operating on a single stack and used to create induced draft on the kiln when starting the fires and operating to exhaust the water smoke up to a temperature of 500° F. This will advance the water smoking period so rapidly that at least one day, and in some cases, more than this, can be saved on the entire burning time, naturally making the kiln more efficient and economical.

Further advantage is found in the fact that when a kiln has been emptied and is still hot, the setting of dry hot ware just taken from the dryer would make the kiln entirely too hot for the men to work in, especially in the summer months, our accelerator can be attached to the door casing where setting begins, and the fan operated as an exhauster, drawing heat out of the kiln which with cold air

THE ECONOMY OF THE DIESEL ENGINE.*

By Richard Repine, Bucyrus, Ohio.

THE function of a power plant is to convert the heat in fuel into useful work. The plant that will convert the greatest number of these heat units at the least cost will be the most economical.

In the steam plant, we find the equipment for this converting process to consist of coal or oil fired boilers, steam engines or turbines with their auxiliaries.

There are a few of the large steam plants of thousands of horsepower which convert 16 per cent of the heat in the fuel into useful work.

The average plant in the clay industry is of only a few hundred horsepower and is known to attain an efficiency of from 2 to 3½ per cent.

In converting the heat units into power with a steam plant, part of the heat is used to bring the temperature of the water up to 212 degrees and a much larger part is used in converting this water into steam. This heat is lost as there is no useful work done until the water is converted into steam.

Then there are the losses by radiation from the boiler, the piping and the engine, with the greatest losses occurring in the exhaust steam and stack.

In a steam plant, the economy of operation is dependent to a great extent upon the regulation of air, coal and feed-water for the varying loads. There are devices which will give nearly automatic regulation but as this point is approached, the more expensive becomes the equipment required.

The efficiency of a steam plant decreases rapidly as the lighter loads are approached and considerable fuel is required even to carry steam on a boiler at times when there is no power required.

The Monthly Digest No. 24 of the Common Brick Manufacturers' Association of America states that one ton of coal is required to manufacture and burn a thousand brick. A report by the Bureau of Mines shows that from 940 to 1,400 pounds of coal is used in burning a thousand brick or an average of 1,170 pounds.

Assuming 800 pounds were used in manufacturing purposes, it would show that the average power plant in the brick industry is consuming approximately 10 pounds of coal per horsepower hour. Allowing 160 pounds for drying leaves 640 pounds for producing the power or eight pounds per horsepower hour.

With the Diesel Engine plant where the process of converting the heat in the liquid fuel into power is a direct one, from fuel to power, it will be obvious that there is less chance for waste.

The Diesel Engine burns its fuel directly in the power cylinder and delivers 30 per cent of the heat in useful work at the engine shaft.

In the cycle of operation, the cylinder is filled with air and the piston moves upwards, decreasing the volume and increasing the pressure. As the pressure rises, the temperature of the air rises. At the end of the stroke, the pressure is 500 pounds and the temperature is approximately 1,100 degrees. This temperature is sufficient to ignite the charge of fuel.

The injection of the fuel is accomplished by air furnished by a compressor which is directly driven from a crank on

amount of fuel delivered to the fuel atomizer, varying the amount according to the load on the engine.

The injection of the fuel is controlled by the fuel valve. The valve opens when the piston has reached approximately the top center, the air forcing the fuel through the atomizer in the form of a mist into the cylinder. During the early part of the downward stroke, the burning of the fuel is regulated so that there is no rise in pressure during the injection period. After the closing of the fuel valve, expansion of the gases takes place until the opening of the exhaust ports.

The Standard Diesel Oil Engine is started with compressed air at a pressure of 150 to 200 pounds. This air is stored in steel tanks and a small compressor unit, in addition to the engine air compressor, is provided for generating this air pressure.

Starting is accomplished by admitting the air to all cylinders through timed valves opened by cams on the camshaft. When the engine has made a few revolutions, combustion of the fuel takes place and the engine turns over under its own power and the air starting valve is closed. This operation requires but a fraction of a minute and in approximately a minute, the engine will take on the load.

The Diesel Engine uses fuel more nearly proportioned to the horsepower output than any other type of internal combustion engine or steam plant.

The high thermal efficiency and relatively low fuel consumption at light loads account for the fact that the Diesel Engine is supplanting steam driven equipment in many industrial plants.

Assuming that an average of 50 per cent station factor is obtained in plants, a Diesel Engine will easily show a thermal efficiency of 25 per cent which means a fuel consumption of .55 pounds of fuel oil per brake horsepower hour.

Assuming an average cost of coal at \$4.50 per ton and fuel oil at 4 cents per gallon, we can now make a comparison of fuel costs for the two plants.

A ton of coal will produce $(2,000 \div 8 = 250)$ 250 H. P. hours and 112.5 gallons of oil costing the same amount will produce 1,532 H. P. hours with the Diesel Plant. Translating these figures into cost per horsepower hour, the steam plant cost would be \$.018 and for the Diesel plant, slightly less than \$.003.

The power required to manufacture a thousand brick will vary with the process and the character of the clay. Assuming in a brick plant with a capacity of 50 thousand per ten hour day, 200 horsepower for the main plant, 100 horsepower for the fans and driving a generator for lights and power for motor driven equipment, there would be developed 4,000 horsepower hours or 80 horsepower hours per thousand brick. The Diesel plant shows a saving of \$.015 per horsepower or \$1.20 per thousand brick.

It would take a good deal of excess maintenance charges, installation charges or any other charges, to overcome this difference in fuel cost especially when we realize that sixty-five per cent of the operating cost of a steam plant is the cost of coal.

The brick plant at Clayville, Pa. has been purchased by The Italian Brick Company of Philadelphia, Pa. James Oblin will have the management of the plant and is now getting same in shape for operation.

The Louisville Fire Brick Works, Louisville, Ky., according to J. H. Bell, vice-president, is enjoying at the present time a better volume of business than at any time since the spring of 1920. The year 1922 was only about 47 per cent normal for the company, Mr. Bell reports. However, business

*A paper read before the Thirty-seventh Annual Convention of the National Brick Manufacturers' Assn., Cleveland, Ohio, February 9, 1923.

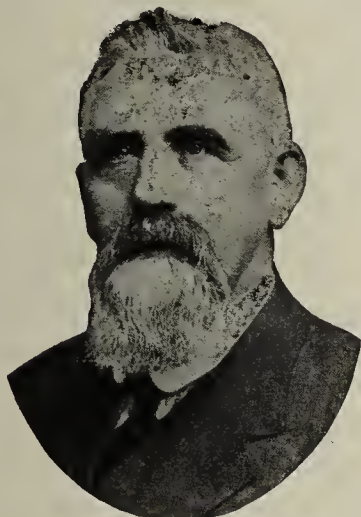
was built up to 70 per cent of normal during the first three months of this year. Of late both plants of the company have been operating at full capacity. The local company was started in 1889 by K. B. Grahn, who was proprietor until 1905. Since that date the concern has been an incorporated company until his death some months ago. Louis Ernst is now president of the company, with Mr. Bell as vice-president and A. L. Ernst as secretary and treasurer. W. E. Difford has been in charge of the sales of the company since the first of the year.

The Benevue Company, newly organized at Middletown, Conn., has acquired six hundred acres of land from the Laurel Brick & Sand Company, at Laurel, on the Connecticut River, where it purposes to mine feldspar, employing one hundred hands at the start, and later establishing a pottery manufacturing plant.

OBITUARY.

DEATH OF JOHN RINGLE.

THE CLAY PRODUCTS industry of Wisconsin lost its most enthusiastic and active worker in the passing of John Ringle of Wausau, Wis., March 15. Mr. Ringle was a most lovable man, a willing worker, shouldering re-



John Ringle,

sponsibilities whenever there was need in behalf of his craft, so that his co-workers feel a deep sense of loss.

Mr. Ringle was for many years President of The Wisconsin Clay Manufacturers' Association resigning the office only last February due to ill health. He was chairman of their freight rates committee, and did most effective work in this connection.

John Ringle was one of the most prominent citizens of Wausau and a factor in industrial, civic and political life of northern Wisconsin. Returning from a walk on the morning of the day he died, Mr. Ringle complained of being very tired and sat down to rest. A few minutes later he sank into his final sleep, death being due to heart failure. For some time previous Mr. Ringle had suffered with weakness and recently took mud bath treatments at a health sanitarium.

Born on October 2, 1848, in Dodge county, Wisconsin, Mr. Ringle came to Wausau with the family at the age of eleven years and had made his home in that city ever since. For years he was prominent in and served as official of city, county and state government, being a Democrat. In addition to heading the brick company, Mr. Ringle also was president of the First National Bank, and a director in the Northern Chief Iron Company, and American Products Company. He married three times and surviving are his third

wife and nine children. Mr. Ringle was a prominent Mason and Odd Fellow, and was affiliated with the St. Paul's Evangelical Church.

DEATH CLAIMS VETERAN BRICK MANUFACTURER.

IT IS WITH deep regret we chronicle the death of George O. Berry, a veteran brick manufacturer of Georgia, and one of the leading citizens of Columbus, Georgia, where he had spent his entire life. Mr. Berry was seventy-four years old, and although he had been in rather feeble health for a number of years, yet had continued active in business affairs and had been at his office the day preceding his death.

His father was a pioneer brick manufacturer of Columbus and after a short experience as a steamboat man, he, too, entered the brick business of which he made quite a success. Mr. Berry was a progressive brick manufacturer and kept up with the procession in the way of modern improvements. He was a member of the National Brick Manufacturers' Association for nearly a quarter of a century and had attended many of the conventions.

Surviving Mr. Berry are his wife, four sons, Turner E., George O., Jr., Walter H. and C. Kinsel Berry, and two



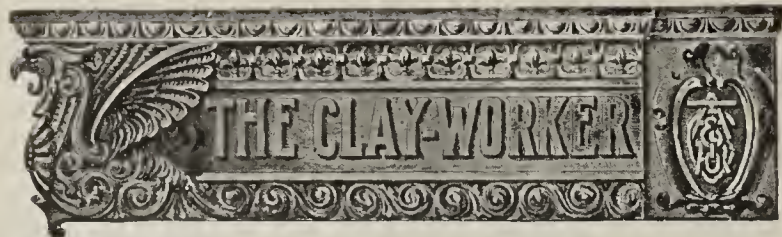
George O. Berry.

daughters, Mrs. Will Patton and Mrs. Will Teagle, and a number of grandchildren.

AMERICAN FIRE BRICK CO. EXPANDS.

Substantial additions to the plant and facilities of the American Fire Brick Company, Spokane, Wash., were announced recently by C. P. Oudin, president and general manager. New machinery and railway sidings are being installed at the plant at Sixteenth avenue and Chestnut street which remained idle last year. "Business is good and orders are increasing," said Mr. Oudin. "This has necessitated the installation of new machinery and additions at our No. 2 plant in this city, which has been idle for a year. Builders are finding that hollow tiles save brick and also conserve clay and are more and more coming to use this material."

Selling face brick these days involves quite a lot of the element of selling the building public on architectural beauty and this in turn calls for a larger share of the personal element and contact. It means more men, and specially trained men, in the brick selling game.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
241 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. April, 1923. No. 5.

CURRENT COMMENT.

Now Old Man Winter passes.

* * *

Lady Spring smiles in his place, thanks be.

* * *

And Old King Coal is dethroned for a brief period at least.

* * *

Kiln fires should be burning, and machinery turning, for the promised call for clay products is good.

* * *

Was the harvest of winter and spring business in farm drain tile all that you hoped for? If not, why not?

* * *

That Build with Brick sign is still one of the best signs of the times in which the industry seems to need a revival of interest.

* * *

Do not yield to the temptations of the hurry call and neglect the thorough burning of your kilns. Good burning is a first aid to quality and future business.

* * *

We may never attain absolute perfection either in person or in products, but we may continue to improve from day to day and it is improvement in the direction of perfection that we should strive for.

* * *

A good example of what enterprise will do is furnished by the fact that there is a lot of composition roofing used where we would naturally like to see clay tile. Had those interested in clay products shown the enterprise in expansion of the composition roofing people there might be a different

story to tell. And now, here is the question: What about clay tile roofing in the future?

* * *

Present-day business with the German mark is about enough to make the remains of old Bismarck turn over in the grave.

* * *

Maybe there are others, but there are two kinds of objectionable folks who may be classed as the half-baked, and the hard-boiled.

* * *

Do not forget or overlook the fact that in the outbuildings on the farm there is a big field of future prospects for the sale of burned clay products.

* * *

Since even the modest cottages in the cities and a goodly share of the country homes now building include bath rooms it ought to spell big doings in sewer pipe.

* * *

The best way to keep manufacturing costs down to a minimum with wages at the maximum is to invest in power-driven machinery and labor-saving devices and methods.

* * *

Here's hoping that the epidemic of spring fever this year will not produce enough of additional wage demands to kill off the goose that lays the golden egg of prosperity in the building industry.

* * *

It is better to have the frame house faced with a veneer of brick than to sell no brick at all for home building, and this should be a step toward the future using of brick and hollow tile for the entire wall structure of good homes.

* * *

Good salesmanship, like charity, may begin its practice right at home. Sell your near neighbors and your home territory thoroughly on clay products and you should be able to increase the local demand enough to lessen the competition in the distant territory.

* * *

It is in reaching out into the broad field of the smaller towns and country districts that the clayworking industry finds the great need for a hook-up with the local dealer in building material. And there is enough of this now to make it all worthy of a goodly share of attention.

UTILITY FUEL CONSUMPTION.

While the clayworking industry is a large consumer of coal and other fuels for burning purposes, calling for something like ten million tons of coal a year in addition to the oil and gas used, the showing here is not large when stacked up along side the fuel requirements in the public utility plants of the country. Figures compiled by A. H. Horton of the Bureau of Mines show that during last year there was consumed in public utility plants 31,564,812 tons of coal, 12,005,882 barrels of oil, and 23,746,290 thousand cubic feet of gas. All this too, in addition to the water power used in different parts of the country which is quite a factor in utility plants.

INFORMATION ON PRICES.

There are indications that we are to have a resumption of what is termed open price reporting by trade associations. That is the including in statistical data of reports of prices actually obtained in transactions that have been completed. There has been hesitancy on this point since the famous hardwood case in which an organization in the hardwood lumber industry was enjoined by the courts from doing this thing.

Later a new organization in the hardwood industry in connection with the Department of Commerce seems to have overcome the objectionable features and has announced that it will resume the statistical department and include therein reports on prices of past sales. This means practically that it has obtained clearance from government authorities to include reporting in its statistical work by making it all open and public and furnishing copies free to the Department of Commerce. Presumably too, other trade associations can and will do the same and the signs point toward a revival of trade association activities along the line of price reporting.

THE SMOKE NUISANCE.

There is plenty of excuse in the air for the revival of agitation against the smoke nuisance, especially in our larger cities. The excuse is made up of heavy soot-laden smoke which we have in unusual quantities this year, largely because of an unusual situation in the coal industry. It is a year likened to a certain wartime period when both the industry and domestic consuming public have had to accept whatever coal they could get and make the best they could of the situation, and out of it has come a lot of smoke and soot even from well designed furnaces.

It is practical at most all times to reduce the smoke nuisance by proper firing and the use of modern furnaces and devices, and when we once get back to normalcy in coal cost and coal supply the subject may well be agitated until we get the right kind of action out of it.

For the time being our sympathies are so strongly with the coal users because of the difficulties of obtaining coal, its cost and its qualities, or lack of qualities, that we do not feel the time is propitious for making an insistent drive at the coal users for smoke abatement.

VALUE ADDED BY MANUFACTURE.

There is one place where the clayworking industry stands out conspicuously in comparison with other industries, and that is in the item of value added by manufacture.

In the census reports these days there is a practice of listing in connection with the number of industries, employees, salaries and wages paid, the value of the raw material used, the value of the manufactured products, and the value added by manufacture. In the average of manufacturing industries the value added by manufacture seldom exceeds the value of the raw material, whereas in clay products the value added by manufacturers stands out conspicuously as the big item. This is clearly illustrated in the census figures of 1920, which show a total value of clay products amounting to \$364,220,000, while the value of raw material entering is listed at \$12,094,000. The difference between the total value of the raw material and the total value of manufactured products represents the value added by manufacture, and this stands out conspicuously in the case of clay products.

There is perhaps not another industry comparable in importance and magnitude to clayworking in which raw material has so small a primary value, or in which so much is added to the value by the process of manufacture as in the making of brick, hollow building tile, drain tile, sewer pipe, terra cotta and other clay products. It may be presumed that most of the raw material value listed here is that of special clays which have either been imported or mined and sold by domestic producers of clay to clayworking institutions. The average clay plant operating on its own clay properties puts but little value per ton on the clay or shale which makes up the raw material. It has a value, undoubtedly, but the value is small and some

interesting phases of value estimating have been developed in efforts to set up a raw material allowance in making out the profit returns or in setting up what some term a depletion charge. Anything that looks like a real figure here on a tonnage basis gives to land by the acre a rather startling value, and this leads to some interesting complications. Out of it all, however, comes the one outstanding fact that most of the value of clay products is the value added by manufacture. Raw material costs are low in comparison with other industries, and the future supply is plentiful. The big thing in it is what it means in the way of direct and indirect employment, in the way of fuel consumption, and in the way of returns to industry through the value added by manufacture.

CONTINUOUS ADVERTISING PAYS.

The ice company which advertised its output the year round, in order to increase the length of the season in which its customers used its goods, had the right idea. The firms which "carried on" their advertising throughout the war, even when they were oversold, had the right idea. Don't permit yourself to be forgotten. The public has its own concerns, you know, so don't give them any excuse for a lapse of memory. Let them know that you are still on the map.

NEW ERA BUSINESS INCREASE.

There are three ways to increase business. One is to sell more goods to the customers you already have; the second is to go out and get more customers in your immediate territory; and the third is to reach out and enlarge your territory.

Study your own plans and results under these three separate heads. If you have been jumbling the whole selling business up together, of course you do not know just where one leaves off and the other begins, but from now on, plan your efforts along definite, well-thought-out lines, and you will have no reason to complain that you are at a standstill, for you are bound to climb up into the sunlight to bigger things. You can't help it. You don't want to.

READ YOUR TRADE PAPERS PROMPTLY.

There are some people who seem to look upon their trade publications as a superfluity which can be read or passed up without it making any great difference. Sometimes several issues accumulate before the business man thinks that he has time to glance through them, and then perhaps he will be astonished to find that the unwise legislation which he might have used his influence against, has gone through; or that warning concerning the advance in price of goods of a certain character, was given weeks earlier and might have saved him hundreds of dollars had he heeded it.

Business publications have several functions to perform. One of these is to give advance information upon which the business man may base his buying and selling activities. To get this information when it is too late to be of any avail is like getting the warning of a coming storm after the cyclone has passed; or to be tipped off about the auto thieves when one's car has disappeared.

The business man who fails to heed the warning signals obtained for him at large cost and much pains, has no one but himself to thank. The logical thing is to fix approximately in mind the exact dates and days of the week when trade papers are due to arrive, and to be on the lookout for these and the information—especially the timely information, which they contain.

Many of the advertisements also are of a timely character.

some of the offers carrying a time limit or quantities of certain supplies being governed by conditions. For example, one man felt that the delay of a single mail did not make any particular difference in ordering the piece of equipment which he had decided to purchase, and yet those few extra hours gave the other fellow the chance to get the particular model he had specified and the result was that he had to wait weeks before his order could be filled.

Even the inspirational and informative and reportorial articles should be read as soon as possible. Ideas are embodied which it is often advisable to put into effect without delay, and most trade papers contain enough solid meat in the way of nutriment to digest, to last from one issue to the next, and to delay the reading of such a publication is to slight the careful perusal of one or the other or both of the issues which come out consecutively.

Read trade papers promptly even as you would your newspaper, and benefit in full measure by the suggestions, news, and recorded experiences given.

CHANGE IN OWNERSHIP AT UNION FURNACE, OHIO.

The controlling interest in the Columbus Brick and Terra Cotta Company has been purchased by Wm. T. Mathews, a live wire, who has made an enviable reputation for himself in the craft, due to his knowledge of the game and his energetic boosting ability.

We are sure that the splendid reputation gained by the Columbus Brick and Terra Cotta Company, through its successful business dealings over a long period of years since its establishment at Union Furnace, Ohio, in 1885, will be maintained and the products continue in the front rank.

Both dry press and stiff mud bricks will be made. A part of the old plant is being torn down and a brand new up-to-date stiff mud plant will be constructed within a very short time.

The old dry press brick plant is being overhauled and the company expects to have a supply ready for shipment by July 1st.

The main office of the company will be at Union Furnace, where the plant is located and where Mr. Mathews is making his home.

ADOPTS FORD MINIMUM WAGE PLAN.

Adoption of the Henry Ford plan of minimum wage was announced today by the Union City Clay Manufacturing Company of Empire, near Stubenville, O., one of the largest manufacturers of clay products in America. The new wage plan was effective April 6, and included every workman in the plant, numbering 350. The minimum wage scale will be 60 cents an hour hereafter and the scale for higher priced workmen will be proportionate. This represents an increase of approximately 33 1/3 per cent. The common labor scale during the past three months has been 40 cents per hour.

"This is an experiment with us," said George M. Myers, general manager of the plant, in discussing the announcement. "We have only a few details of the Ford plan, but they have impressed us so much that we believe it will benefit us to try them out.

"We expect to secure better co-operation between our employees and officials and better results in workmanship should result. If the plan works for Ford we believe it should also work for us.

"We also hope through our new plan to obtain a better class of workmen. Steady workers, regularly employed at a scale of pay above the 'bread line' and better service for better wages should, we feel, do all for us that it has done for Ford."

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker; published monthly at Indianapolis, Ind., for April 3, 1923.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall,

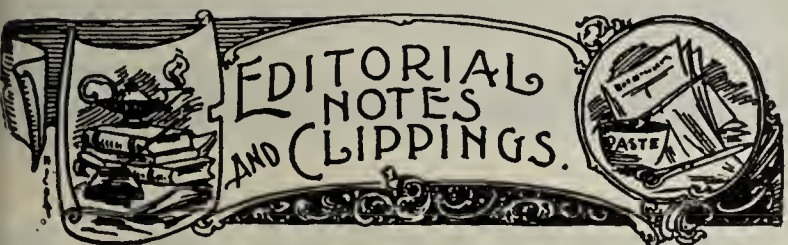
Editor and Business Manager.

Sworn to and subscribed before me this 20th day of March, 1923.

(Signed) CHRISTA A. LEWIS, Notary Public.

(Seal)

My commission expires June 30, 1925.



EDITORIAL NOTES AND CLIPPINGS.

The Whitesville Brick and Lumber Company at Corsicana, Tex., has increased its capital stock to \$150,000.

Vitrified bricks will be used in part of the paving program that will be carried out at Sanford, Fla., W. B. Williams, city manager, has announced.

The Wellsville Fire Brick Company of Wellsville, Mo., has increased the wages of all of its employes ten per cent. The plant is running at capacity and has many orders ahead.

The Florida China Clay Company has been incorporated at Leesburg, Fla., with a capital of \$100,000. R. L. Fox has been elected president and R. B. Bourlar, secretary and treasurer.

The Peninsular Brick Company has been formed at Salisbury, Md., with a capital stock of \$50,000 and with Glen Perdue, Harry S. Bradshaw and L. Atwood Bennett as incorporators.

The Big Stone Gap Brick and Tile Company has been incorporated at Big Stone Gap, Va., with a capital stock of \$100,000 and with the election of W. W. Taylor as president and I. C. Taylor as secretary. The company will manufacture clay products.

Clyde K. Turtley, president of the Kentucky Refractories Co., has announced that the company will build a \$75,000 refractories plant at Chinnville, Ky. The plant will occupy 12 acres of ground and will be electrically operated. The company will manufacture furnace linings and general purpose bricks.

Through use of clays recently discovered, the Boulder Clay Products Company, Boulder, Colo., has been able to turn out a milk white brick at its plant at Valmont. Although the color range of bricks previously turned out by the plant ran from tan to black, no combination of clays has previously been found that would produce so light a shade. Experiments with the clays are now being carried on by W. G. Buckles, manager of the Boulder Clay Products Company. The light colored brick will be used for facings in the new North Side Junior High School. While the number to be used is not worked out to exactness, it is expected that the order will run close to 100,000. Curiously enough, the clay on the Tyler ranch that burns almost pure white is almost jet black as it comes from the ground.

The Morris Brick & Tile Company, Denver, Colo., has been incorporated by L. D. Mossis, A. L. White and M. P. White. The company is capitalized at \$50,000.

The Kentucky Refractories Company, Chinnville, Ky., has been organized with \$750,000 capital stock. Clyde K. Turley, of Ironton, Ohio, is president of the new concern.

The Stowe-Fuller Refractories Company, Cleveland, Ohio, certified to increase the capital stock to \$500,000. C. B. Stowe, and J. H. Fuller are the principal stockholders.

Wm. Hodkinson, of the Hodkinson Brick Company, of Chadron, Nebr., died recently at his home in that city. He had been engaged in the brick manufacturing business for over 20 years.

The Blue Ridge Clay Mining Company, with a capital stock of \$300,000 has been incorporated at Wilmington, Del. The company, which is represented by the Corporation Service Co., of Wilmington, will operate clay properties.

Fire which started in the clay chute of the Evans-Howard Fire Brick Company, St. Louis, Mo., resulted in a \$10,000 damage. The fire started from friction in one of the grinding machines, and had gained considerable headway before discovered.

The Egypt Brick and Tile Company, of Ullin, Ill., has filed articles of incorporation with the secretary of state at Springfield, showing a capitalization of \$25,000, and C. D. Train, Thomas Scanlin and A. S. Dale as the incorporators. The company will manufacture and deal in brick, tile and clay products.

At the recent meeting of the directors of the Mapleton Clay Products Company, Canton, Ohio, the following officers were elected: President and general manager, E. J. Schario; vice-president, Ira Pence; secretary and treasurer, W. E. Mason. Reports show a very satisfactory condition of business for the past year, with prospects for further improvement during the coming year.

Dr. H. P. Gregory, of Mexico, Mo., has announced that he will establish a brickmaking plant for manufacturing building brick. He is now purchasing the machinery necessary to get the plant in operation. The clay he will use is on his premises in large quantities. Some years ago Mr. Ketter operated a brick plant at this same location and for years supplied the local demand and that of a number of other cities in other sections of Missouri.

We are in receipt of a letter from C. B. Mayhew, formerly of Bay View, Washington, advising us he has decided not to rebuild the plant of the Star Brick & Tile Company, at that place which was destroyed by fire some time since. Mr. Mayhew has returned to his old home at Demos, Ohio, and is now open for the position as superintendent with some good brick manufacturing concern. He is well fitted for such a position for he has spent many years in the business.

PROTECT COSTLY KILNS—



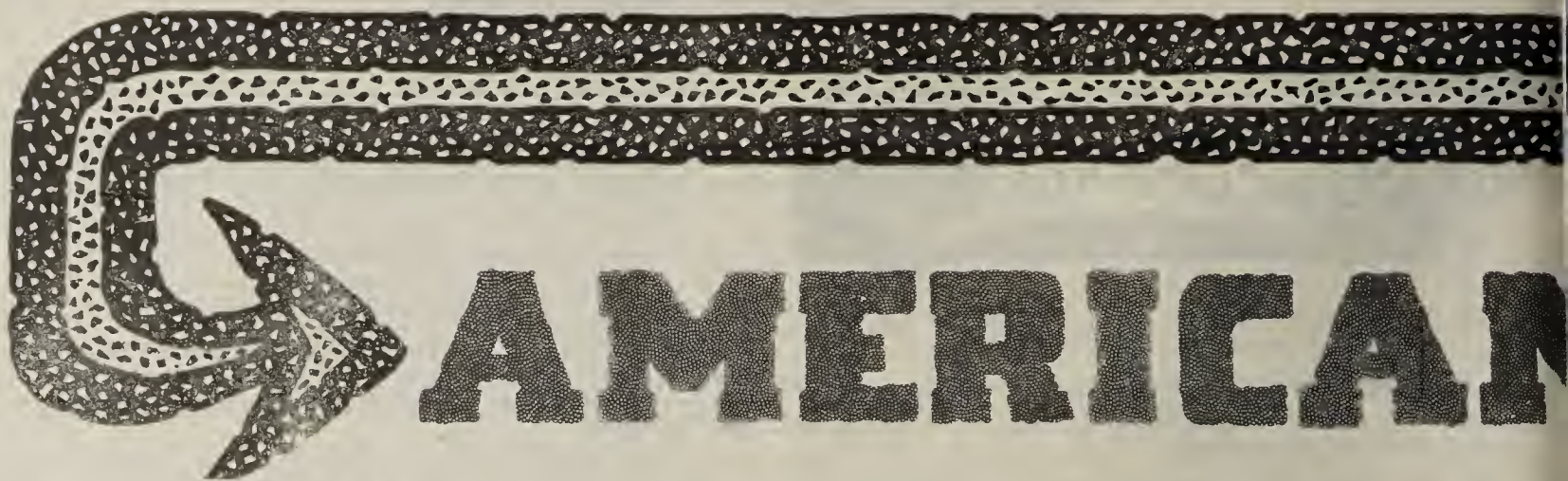
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Consider the Capacity—Cost Saving—
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"Ask the Men Who Know"

Ten hard headed, close figuring, careful buying, progressive Clayworkers have recently Bought the Grinders, to better their quality—increase their output and Cut their Cost.

"Ask the Men Who Know"

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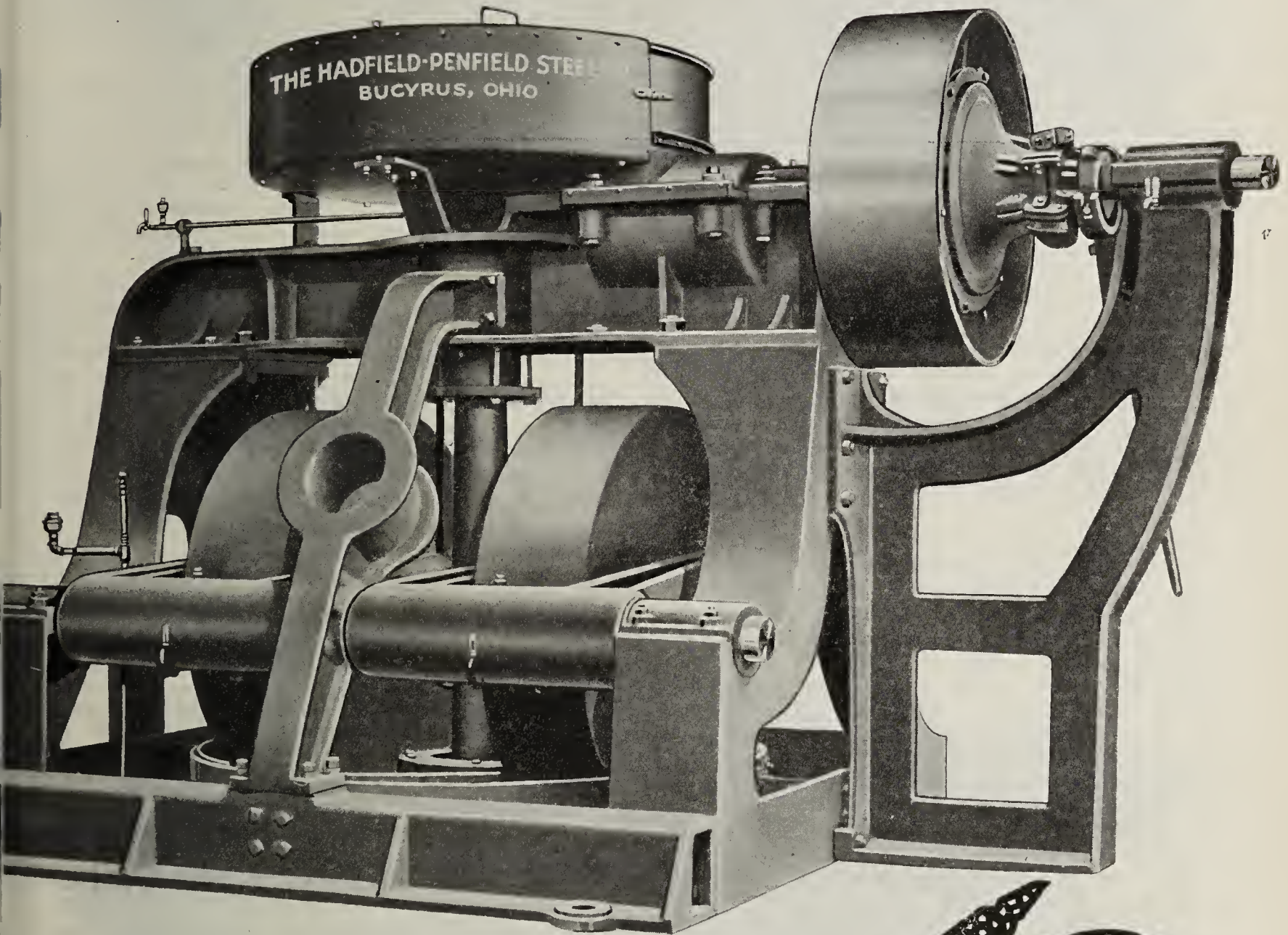
Salt Lake Press Brick Co.,
SALT LAKE CITY, UTAH

Francis Vitric Brick Co.,
MUSKOGEE, OKLAHOMA

Clay Craft Mining & Brick
SHAWNEE, OHIO



Line of Clay Machinery



The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO

EDITORIAL NOTES AND CLIPPINGS—Continued.

Ashland, Ky., has awarded contracts for paving streets in which paving brick will be used.

The Conroe Brick Company, of Conroe, Tex., has been incorporated by B. E. Hinchcliffe, W. M. Merriss and B. J. Lieka.

B. F. Hayden and C. D. Cope, of Springfield, Mo., will establish a plant for the manufacture of machinery used in the manufacture of Haydenite brick.

Nelson Lund is at the head of a company recently organized which will erect a large brick manufacturing plant at Palermo, Calif. The clay has been tested with very good results.

Boyd A. Bennett, city manager of Charlottesville, Va., announces that paving will be done in that city soon, in which a great deal of paving brick will be used and estimates on these supplies are now being gotten.

The Canton Brick & Fireproofing Co., of New Philadelphia, Ohio, expects to have its new plant at Newcomers-town running full force by the first of May, turning out close to 100,000 brick per day. The plant will start with seven kilns and more will be added later on as necessity demands it.

The Drury Brick and Tile Company, of Essex Junction, Vt., is installing new machinery and making other improvements of the plant which will enable them to increase their capacity. The new improvements include the installation of electric power for operating the plant. The company has orders booked now for over two million brick.

The Ritter Brick Company, of 111 West Jackson Boulevard, Chicago, has filed articles of incorporation with the secretary of state at Springfield, Ill., showing a capitalization of \$100,000. The company will manufacture and deal in bricks and building materials. The incorporators are Rudolph Ritter, Stephen E. McCann, Jr., and Aloys J. Enzenbacher.

A. W. Wolf and S. J. Galvin, of Hampton, Ia., and Ben Wallace and Grover Galvin, of Rockford, Ia., have purchased the plants of the Sheffield Brick & Tile Co., and the Sheffield Tile Co. The factories have been idle for several months and the new owners will at once make arrangements to have same operated to capacity. S. J. Galvin will be general manager, and the new concern will be known as the Hampton Brick and Tile Company.

The Tucson Pressed Brick Company, of Tucson, Ariz., reports splendid prospects for the coming season. The company turns out a wide range of brick ranging from common to face brick of various colors, both smooth and rough texture, and also hollow building tile. The plant has a daily capacity of seventy-five thousand brick or its equivalent in hollow tile. The company takes care not only of the demand in Tucson, but ships to various points in the state. Within the past year the plant has been rebuilt and much additional machinery and appliances installed.

W. H. Hill and F. E. Robison of the Murphysboro (Ill.) Paving Brick Company, with Henry Reuss, of East St. Louis, have formed a company and will erect a \$250,000 plant for the manufacture of brick and tile at the latter place. They have a sixty-five acre tract of splendid shale which has been thoroughly tested. The new concern will be known as the H. and R. Mining and Manufacturing Company and will be run as an entirely separate concern, although Mr. W. H. Hill will still continue as general manager of the Murphysboro Paving Brick Company. The long and successful experience of Mr. Hill in connection with the old company speaks well for the

success of the new concern, which will in a way be a family affair, since Reuss and Robinson are sons-in-laws of Mr. Hill.

The Hudson Brick and Supply Company has been incorporated at Arlington, Va., with a capital of \$200,000. Henry W. Heine has been elected president and Edwin K. LaFover, secretary. Both are from Washington, D. C.

The Columbia Terra Cotta Company has been organized at Vancouver, Wash., and will at once erect a plant for the manufacture of terra cotta. M. L. Bryan, who is at the head of the company, has had many years' experience in the manufacture of terra cotta.

Ground has been broken for the new plant of the Rutland Fire Clay Co., at Rutland, Vt., and the work of building the plant will be pushed as fast as possible. The company plans to spend something like \$50,000 on this new unit which will enable them to double their present capacity of fire clay products.

The old Clippert-Spaulding Brick Company's plant at Lansing, Mich., has been purchased by The Briggs Co. The new company has more orders on hand than they can fill and so are running the plant to full capacity in order to catch up. The company also has a plant at Grand Ledge which was partly destroyed by fire a few months since. This plant has been operating since April 1st and will be operated both day and night for the next few months.

A. E. Venable will open a brick plant within a few months near Rockwood, Tenn. The new enterprise will employ thirty men and turn out 25,000 bricks daily to start. Mr. Venable has taken a lease on the McNew place, near Cardiff, Tenn., and has purchased a brick plant at Danville, Tenn., which will be moved to Rockwood at once. The machinery has a daily capacity of 50,000 bricks. The new brick plant is on the same site as a large one which operated during the Cardiff boom days. Samples of the clay have been subjected to chemical analysis and tests are said to be highly favorable.

What promises to be a new and thriving industry with headquarters in Fostoria, Ohio, is that of the Union Brick and Tile Company, just recently incorporated for \$50,000 with Detroit and Fostoria capital interested. The new concern has purchased the property of the Hatton Brick Company and will manufacture tiles and different kinds of brick. The Hatton clay is said to be the finest grade and plenty of it. E. George Mueller, of Detroit, a civil engineer who has had nine years' experience in making brick, is the manager of the company and is one of the largest stockholders. M. C. Karp, of the Karp Coal and Ice Company, of Detroit, is the president. Temporary offices have been established with attorney A. J. Stackhouse.

Shooting Soot from Updraft Kilns

Don't worry about wood or coke for drying out your kilns. You can do it with bituminous coal if you have one of my special soot guns to blow the soot. They can not get out of order or wear out. Price, with instructions, only \$15.

F. W. GLECKLER, Oak Harbor, Ohio.

See my ad on page 502 about protecting arches.

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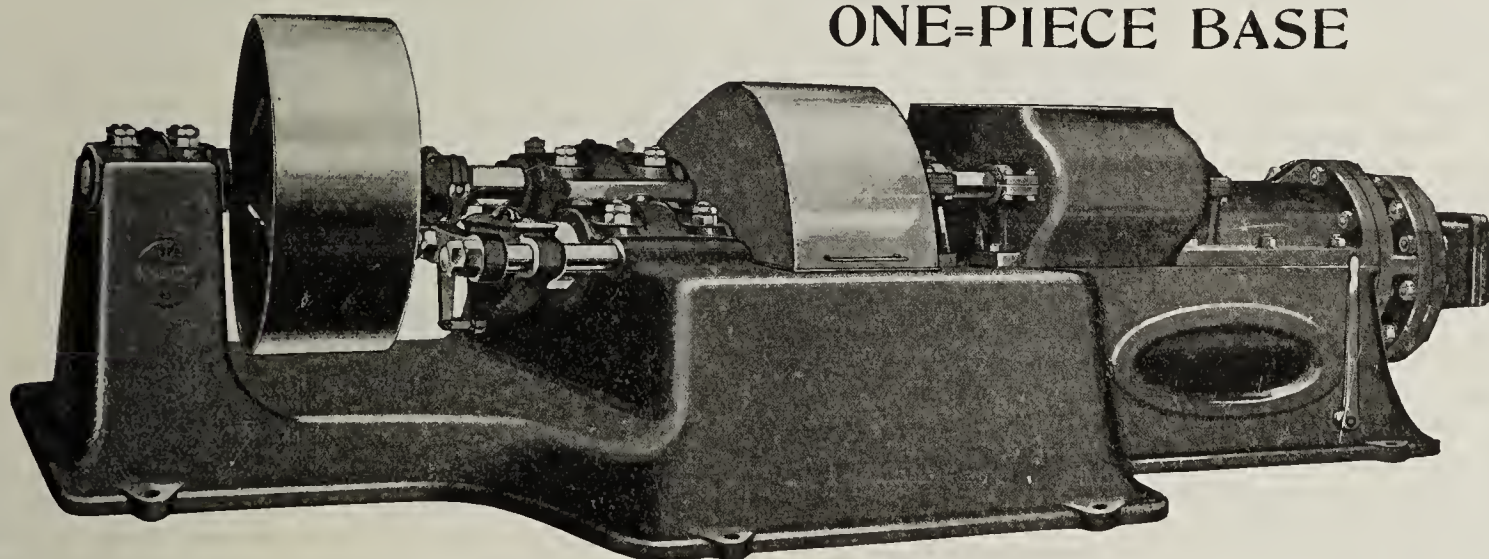
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International Clay Machinery Co.

Dayton, Ohio, U.S.A.

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Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



WAY IN WHICH THE various brick plants and ceramic undertakings of the West are adding to their capacity, and improving their machinery, and enlarging the variety of products, indicates a conviction that there is business a-plenty ahead. The generality of this impression is indicated in the numerous small enterprises of local nature, by which old yards long abandoned are being brought back to life or new ones are being started.

And when we look at the magnitude of the building records of Chicago and New York, the westerner is probably justified in feeling that this period of unusual growth is necessary to regain ground lost during the war and to bring the building requirements back to normal. Be this as it may, the opening of thousands of acres of new land to production and the launching of many new industrial and commercial enterprises is necessitating an acceleration of western immigration, and every new-comer has to be housed.

The desire for clay deposits has also stimulated prospecting to locate them, and the results have been on the whole gratifying. An interesting discovery is that of a fine bed of kaolin out on the Mojave desert midway between Mojave and Randsburg. Arthur A. Statter, former assistant secretary of the treasury, has located there what he believes to have been the old pottery beds of the Mojave Indians. For the Mojave Indians were in the habit of bartering their pottery wares for such things as the desert could not supply them. The clay is declared of equal texture with that from which the famous Haviland china is made. Statter has filed his claim under the name of the Black Butte Mine, and has formed a syndicate to assist in the work of exploitation.

A unique development has been that of Chas. T. Bray, of Salt Lake City, Utah. Mr. Bray has received a government patent for a machine for making bricks from the slag of smelters. The machine has a capacity of 96,000 bricks per day. Mr. Bray states that these bricks made from slag withstand a pressure of 23,550 lbs. per sq. in., thus testing ahead of either cement or granite. He has submitted his product to the state road commission, and asked that it be used in the construction of some of the state roads. Once properly laid, he says, it will require no maintenance, as the brick construction will allow for contraction and expansion. In making the brick, the slag is re-melted in a blast furnace and poured into the molds. Up to date, it has been only a useless nuisance to the smelters. A company has been incorporated for \$300,000 to carry on the enterprise, and authority has been obtained from the state securities commission to sell \$100,000 worth of stock.

An interesting experiment is being tried at the Lincoln plant of Gladding, McBean & Co. This is the construction of Russell Tunnel kiln for the burning of roof tile. Kilns of a similar type have been used successfully for porcelain and sanitary ware, so the experts of Gladding, McBean & Co. have concluded there is no reason why they should not do service for roofing tile. So a kiln 165 ft. long is being constructed at a cost of \$100,000. The objectives sought for are the reduction of fuel costs some fifty per cent, and the saving of several days time.

Fresno and Sacramento were the two cities that in February made a bigger building record than during the previous year. This is probably justification enough for the Sacramento Brick Company to enlarge its capacity. So they are

adding a new mixer building 60x160 ft. and two new drying buildings 75x175 ft. New machinery will be installed to eliminate hand work. The manager, H. H. Bartells, figures that when their improvements are complete they will be able to run the year round, and to increase the capacity of the plant from twelve to eighteen million bricks. And plans are being drafted to speedily double this if necessary.

The brick shortage of the past year has also tempted the Southern Pacific Brick and Tile Company at Exeter, in the vicinity of Fresno, to enlarge its plant and arrange for running the year round. Just at present they are installing twelve dryer tunnels 120 ft. long. These will be fed by hot air from the kilns by the use of multivane fans. The tunnels will carry a temperature of 225 to 250, and each can be used separately. 220 double-decked all-steel cars will be used, each carrying 650 bricks. 24 hours are estimated for the drying process. The plant is now electrically equipped with 180-h.p., and is prepared to run day and night and all the year round. **SUNSET.**

CEMENT DOINGS.

AN EDITORIAL review of 20 years of service by the Portland Cement Association furnishes an interesting reminder of how the cement industry has grown. Back in 1902 when the industry was organized into an association the shipments of cement for the year were 17,000,000 barrels. This year it will run practically 110,000,000 barrels with promise of still bigger things in the years to come.

The first reason or factor given in the successful progress and the service of the association is that it has brought practically all the manufacturers together for co-operation in educating the public to the value of its products. There has entered, too, of course, matters of improvement and economy in manufacture.

Cement has made a splendid showing during the past 20-year period, and has furnished a splendid example of trade association work, too. And there is no question that it will be a big factor in the construction work of the future.

ENLARGE BRICK PLANT.

The Anniston Refractories Company has under course of construction at Pell City a new six kiln fire brick plant which they expect to have in operation within a short time. The company recently secured a large area of fine clay at that place and the increased demand for their products has made it necessary to extend their present plant facilities. Additional kilns are also being erected at the Oxford plant of the concern.

A MILLION A MONTH.

The Bloomburg, Pa., Brick Company is fast coming to the front. During the last two years, under the management of M. J. Stoue, it has more than doubled its output without adding to its capacity, but, now, with the new kilns under construction and contemplated, will add about 25 per cent more and make the output considerably over the "Million a Month" mark. Most of the product goes to the New York and Philadelphia markets.

Duplicity.

"My husband is a deceitful wretch."

"What makes you think that?"

"Last night he pretended to believe me when he knew I was lying to him."—Boston Transcript.

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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MAKING BRICK and TILE IN DIXIE

The Oldest Human Industry Registers Remarkable Progress, as Evidenced by the Dixie Brick Company of Columbus and The Flint River Brick Company at Albany, Ga. A Convincing Demonstration of the Economy of the Minter System of Drying and Burning Brick and Building Tile.

COLUMBUS, GEORGIA, is an interesting city—a city with an historic past; a city with a most promising future, being an important industrial and educational center, with a present population of over 30,000 people. It is the county seat of Muscogee county, which is one of the most fruitful sections of Georgia.

Back before the war of the Rebellion it was a thrifty village and played an important part in the state's war activities. There was established in the immediate vicinity an important army supply depot for the Confederate forces and it is alleged that the final battle of the war occurred there when the Federal forces under General Wilson captured this Columbus stronghold, April 16, 1865.

A half century of peace has brought to Columbus its reward of prosperity and plenty and it is today a hive of industry, numbering among its local establishments some of the largest cotton mills in the country. It is noted for the production of fine hosiery and boasts of some immense cotton seed oil mills, with the usual quota of machine shops, etc. etc.

Most of the mill workers are white laborers and the enterprising captains of industry of that section have wisely provided for the education and training of the younger generation, and have established a school system which ranks

high in the educational world. One feature which seems quite unique is a rule by which the children of the mill workers are given sufficient time each day to carry dinner to their parents or relatives who are at work. With equal wisdom, they have established trade schools, where the children are taught something more than mere book learning.

A community is known by the roads and highways it maintains, and Columbus has just reason to be proud of its streets and thoroughfares. This is natural, for Columbus is the headquarters of the Dixie Overland Highway Association, which was conceived and organized there in 1914, and its good road boosters have been instrumental in the building of a great highway from Savannah to San Diego, California. The Florida Short Route Association also is indebted to the public-spirited leaders of that community.



The Minter Stackless Kiln, Railroad Switch and Coal Piles in the Background.

To the writer's way of thinking, its most important industry, inasmuch as it supplies the most dependable material for the upbuilding of the city, is the Dixie Brick Company, which is located four miles from the city, just over the state line in Alabama. The city lies on the east bank of the Chattahoochee river.

The plant is located on a branch of the Central railroad of Georgia, Columbus being an important junction point of

that system. It is also a terminal of a branch of the Seaboard Air Line and the Southern railway systems, so that excellent railroad facilities are afforded its great manufacturing industries.

The Home of the Minter System.

A trip to the plant of the Dixie Brick company proved most interesting. It is a real treat to see a tidy brick plant. Some of the readers of *The Clay-Worker* may say "there is no such animal," but if they will visit the plant of the Dixie Brick company they will have to admit their error, and agree with us that a brick and tile plant can be operated in such an orderly manner that though the raw material may be clay, and coal is used extensively in the process of manufacture, the cleanliness may prevail. One can go about the Dixie plant without overshoes or overalls, and keep clean.

The plant was designed by Mr. M. M. Minter, the inventor of the Minter system of burning and drying brick, and is a model, moderate capacity plant. We found the plant manager, Mr. J. E. Minter, in charge, and while not a kid-glove workman, we noted that he wore a white shirt. Evidently he is tidy and orderly by nature. Nowhere about the plant did we find any unseemly ash piles or discarded machinery,



Large Capacity Clay Car, M. M. Minter, H. Ewart and J. E. Minter. Clay Bank in Background.

nor did we discover any brick bats. Commenting on this unusual feature, we were told that the plant turned out good brick only. Their daily average is 60,000, and two-thirds of this quantity go as select brick. They do not market salmon brick, for they do not have any, so far as we could see.

The clay bank is extensive and of excellent quality. The steam shovel does the digging and deposits the clay in large-capacity cars, as will be seen by the accompanying photo of same, which are taken up on a substantially built incline to bins above the crusher and brick machinery. The latter equipment is from the factory of J. C. Steele & Sons, Statesville, N. C. From the brick machine the green ware and finished products travel by easy grades toward the freight cars and stock sheds.

The Minter driers and kilns are the pride of the plant. Waste heat is used in the former, there being a nine-track drier 110 feet in length, accommodating fifteen cars, each holding 570 brick. Two fans are used for the necessary draft. They are made by the American Blower company and are known as the Minter pattern, and are especially adapted to the work required. The brick are burned in nine Minter round down-draft kilns, twenty-seven feet in diameter, each holding 750,000 brick. The hot air from cooling kilns

is conveyed in underground tunnels to the drier or to the kilns, as the occasion requires, and the system works so effectively that, though hard to burn, the brick are burned all hard in seventy-two hours. Each kiln is burned twice a month, or to be more specific, eighteen kilns are burned in twenty-eight days. By this method, their kilns are continuous in operation, and there is a decided saving in fuel and also in the time required to burn. Mr. Minter insists that fuel saving is ultimately of far greater importance than first cost in drier and kiln construction, and they have demonstrated at this plant that they save enough fuel to pay for the plant several times over, during the life of the kilns.

The Minter system, while not leading a double life, has offices in Albany, Georgia, in charge of P. J. Brown of that city, as well as Columbus. At Albany they also operate the plant of the Flint River Brick company, which is similar in all essential details. The reader who desires further information relative to the Minter system is requested to address his communications to Columbus, Georgia, where their engineering department is located and operated under the direction of Mr. M. M. Minter, a skilled mechanical engineer, and his able assistant, Mr. H. Ewart, who are always glad to welcome to Columbus, visiting brick and tile manufacturers, particularly those who seek practical information on economi-



A Fine Car of Brick Just Out of the Drier.

cal and efficient methods of production. That is what the Minter System stands for. It will pay those who are interested, to journey to Columbus, or other points where the Minter System is in operation, and see for themselves the measure of perfection, which has been attained in the production of high grade ware. It is well worth while.

COAL LEAKS AND LOSSES.

The retail coal dealers through their associations are now giving some attention to the weight loss in coal, or rather the lack of accuracy in weighing coal. And the clayworking industry, as a prominent consumer of coal, may well not only lend an ear, but also join forces with other interests in working for more accuracy in coal weighing while in transit in railway cars.

There are really three divisions of loss of coal in transit from the mines to dealers and consumers. One is loss through inaccuracy in weight and natural evaporation. One is stealage in transit, and one is leakage especially of pea and slack coal. There is enough of all of this that a big retail dealer who has been in the business for a quarter of a century says that they invariably deduct 3 per cent. from the gross

weight of coal received for loss in weight in entering it on their records.

A check up by a brick manufacturer who uses the egg nut size in coal by weighing his coal as he uses it up periodically shows an average weight loss of about a thousand pounds to the car. This the experienced coal man says is rather low, that their losses in the coal yard will on the

high, and this makes the matter of error in weight assume rather vital importance.

The real problem, however, is that of how to correct the trouble. Coal is weighed, as a rule, in full train loads as it passes slowly over track scales at or near the mines. Those who have had experience in weighing coal admit that accuracy is impossible under such conditions. To uncouple



Side View of the Minter Brick Dryer Dixie Brick Co., Columbus, Ga.

average run higher than this, high enough that he persistently figures 3 per cent. off.

This coal man, too, went into details as to their losses and the agencies of waste. He said with the modern hopper cars there was a leakage loss in shipping pea and slack that was very common and persistent, so much so that they were objecting to hopper cars and showing preference to flat bottoms. Then he told of how he had checked up and observed cars which had been robbed of coal in transit while standing

each car, weigh it separately and then remake up a train adds to the time and cost of handling, and naturally the railroads are not anxious to enter into any matter involving revision and greater pains in weighing coal. Coal dealers and industrial consumers, however, are awakening to the fact that this matter of error in weight loss in coal is of material importance and needs attention. So the signs of the times indicate a probable systematic drive for better weighing and more accuracy in the matter of coal weights. Surely the



A Glimpse of the Minter Kilns at the Plant of the Dixie Brick Co., Columbus, Ga.

on sidings, and he knew of one case where a car actually showed up 7 tons short and it had been taken off while in the terminal yards of the railroad waiting placement on the coal man's switch. In the old days when coal prices were so low that coal was nearly dirt cheap, and railway freights were comparatively low, too, there was not so much thought given to the matter of correctness in weights. Today, however, not only are coal prices high, but the freight rate also is

clayworking industry has enough at stake here to justify participating in efforts of this kind.

While industrial activity is now up to the peak point it is worthy of note that prices though higher have not climbed to that inflated peak of 1920, which means some assurance of continued prosperity and against heavy deflation losses if we do have a reaction.

OUR CERAMIC FAMILY

Hewitt Wilson, Director of Ceramics, University of Washington,
Seattle, Wash.



ERAMISTS are becoming a most aggressive and hoggish bunch of engineers and chemists. Instead of being content with the job of bossing the brick and pottery trades, we also claim seniority rights to all classes of refractories, enameled iron wares, glass, cements, limes and plasters, abrasives and electrical and thermal insulation products, because these products are made of earthy materials and high temperatures are used in their manufacture. We have our claims down in writing in one of the oldest languages of human beings, that is, the word "Ceramics" comes down to us, through the Greek, from an old Sanskrit word meaning "burnt stuff." And so we can rightfully claim all the burnt stuff except that fired in the kitchen stove.

Most all other manufacturers dependent on natural resources are carefully calculating and estimating the number of years they can stay in business. The lumber man figures that he will have to close down inside of fifty years, because if he does not get busy and grow a few trees, he will have no more to cut. We have had several scares with oil shortages; we know how much coal, copper, lead, precious metals and even iron remains in the earth, and conclude that when those materials have all been mined we will still have plenty of clay left for making brick even though we do not have any fuel with which to fire them. We have the greatest quantity of natural resources of raw material. It is a mighty poor community that does not have sufficient plastic rock material or clay for building houses. Nature has been working overtime, for a good long time, in grinding and pounding rock to make clay for us.

What is clay? If we take W. F. Clarke's analysis of an average mixture of all the igneous or heat-made rocks, we get something like this: Silica, 63 per cent.; alumina, 15 per cent.; iron oxide, 6 per cent.; lime, 5 per cent.; magnesia, 3 per cent.; soda, 3 per cent., and potash, 3 per cent. In the grinding of these parent rocks to powder and the transportation by rivers to the lakes and oceans, the sediments from large areas mix, so that if we analyze the average of the sediments or the clay materials we get a very similar analysis to the above, plus additions of water, carbon dioxide, sulphur oxide and carbon.

Nature has been rather careless in her big laboratory: in the sorting of her materials, in her solutions and precipitations, the washing of her filtrates, and the cleanliness of her receptacles. However, if she had been more careful, fewer chemists, miners, engineers, and ceramists would be needed.

Let us consider the above group of the most popular natural oxides as a ceramic family group and look up the pedigree of each member of the family. We can consider SILICA as the father. He has a rather strict, puritanical or Presbyterian aspect, and is rather stiff, unyielding and set in his ways. We find him most often in the bosom of his family, that is, combined with the other members in some sort of a silicate relationship, but quite often he gets tired of having the children around and gets off by himself, under the names of quartz, sandstone, chert, flint, chalcedony, etc. Father Silica is the most abundant oxide, one of the hardest and one of the most resistant to abrasion and solution. He can

scratch all the rest of the group save when Mother Alumina appears as corundum.

Mother Alumina, next in size and abundance, is rarely found by herself. She loves her family and keeps close to the family home. The bauxite or diasporite deposits of Missouri and Arkansas are the worst evidences of natural silica divorce in this country. These modern times have had their influence on our family circle, however, and when Father Silica and Mother Alumina go to these all night dances and get in the glare of white lights of the electric furnaces, their marriage bond is apparently something of trifling value.

Now for the children. Calcia and Magnesite are the fighting twins. Calcia is the larger, is found all over the country, and has all the activities and restlessness of a growing boy. Being an active flux, not only a ceramic work, but also in the iron and steel industry, he is usually up to some mischief. One of his chief forms of amusement consists of dropping limestone "poppers" into the common brick mixtures, or if the kiln fireman is not careful he will find his brick stuck and fused together with calcium silicates. The fire brick man detests him and will have nothing to do with him; although, alone, Calcia is a most refractory and high-melting lad, when the other ceramic folks are around, he can not be made to behave.

For all his activeness, Calcia's health is a continual worry to his mother. She is afraid that she will never be able to properly train him to stand exposure after heating. Endless experiments have been made to produce fire brick out of Calcia because he can withstand such high temperatures, and, theoretically, does not melt till 2,570 degrees C. However, the lime-brick, after firing, soon fall to powder if exposed to the air because Calcia can not resist the opportunity of filling up on a soda water mixture of carbon dioxide and water vapor from the atmosphere. Some people get alcohol and even coffee "jags," but Calcia gets his "kick" with soda water.

Although Calcia has proven unreliable in the refractory work, he is quite a useful person in other lines. He manufactures Portland cement, quick and hydrated lime for the building trade and has several side lines in chemical manufacture, and, in fact, has grown very wealthy and independent.

Magnesite, the twin sister, tags around after Calcia, and, like a smaller sister, tries to play with him and do everything he does. When they were babies they both slept in the same crib, which was nicknamed "Dolomite" by the family. However, they quarreled so much at an early age that it was necessary to separate and assign them to separate beds. Calcia named his Limestone and Magnesite calls her bed Magnesite. Magnesite is a properly trained young lady at the present time, and is giving very useful service in the iron and steel industry. She carefully holds the hot steel while the furnace operators clean and refine it. Calcia made such a good success in the cement business that Magnesite has been tempted to devote herself to a similar occupation. She figures that if she can make a cement which will set and develop its strength more quickly, a good share of this trade will be hers. She has named her brand of cement after herself though sometimes it is called Sorel cement after the man who showed her the manufacturing process. However, because she has been in the business but a

short time, we find that she had considerable to learn about cement.

As in some of our best families, we find a scandal in ours. Miss Sulphur is regarded by our ceramic family as a flip young thing, who is always looking for, and does cause a lot of trouble among the young men. She gives trouble in the burning of clay wares by flattering them until they bloat from pride, or she will scare the poor little brick people until they turn white from efflorescence. Then it is necessary to call in Doctor Barium Carbonate, who is one of the few people who can effectually make her behave.

Once a long time ago, Calcia and Sulphur ran off and got married. So now we have large numbers of Calcium Sulphates, or $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$. Much to the surprise of the family, Sulphur has settled down and has made Calcia a very good and useful wife. In our family, the women work with the men. Calcia and Sulphur have gone into the plastering trade, although they do dabble in mold work for the pottery and terra cotta people.

Twins seem to be common in our family, for another pair appears—the Alkali twins, Kaytu-O being the boy, and Enatu-O, the girl. Mother Alumina can not understand their dispositions. She is so stable, insoluble and heat-resisting herself that she can not understand their soluble and low-melting characters. They are the first to dissolve out of the parent rock and go sailing with that ever present rascal H-tu-O. They are the first to melt and run in the furnace at very low temperatures and it takes the rest of the family to hold them up. They redeem themselves, however, when it comes to the manufacture of porcelain articles, for when properly chaperoned with Father Silica and Mother Alumina, as feldspar, they represent a very important unit for all whiteware and glaze bodies. Being soluble they are great travelers of the world's waterways. In some of their past voyages they have been shipwrecked and lost in the desert several times so that we find evidence of them in Chile, California, Eastern Washington, etc., as soda ash, nitrates and other soluble descendants. Some of these have gone into the laundry business and some in the glass business with Father Silica, but part of them are sailors and still wander around in the ocean, never reaching a permanent home.

Ironox is the black sheep of the family. He is one of these persistent fellows who worries the rest of the family with his off-shaded colors when they are trying to turn out a respectable whiteware body or a clear white glass. If he once gets mixed into a batch of clay or glaze there is almost no hope of driving him out. He has been known to flirt with Miss Chlorine and has even been detected in stealing away with her, leaving the home behind bleached with the joy of getting rid of him. Ironox has assisted his sister, Magnesia, in her refractory work. The two of them have formed a company called Ferro-Magnesia and Company, and supply the iron and steel trade with basic magnesia brick, having branch companies in most all parts of the world. In the manufacture of common red brick and tile, sewer pipe, etc., Ironox works with the family, and, when properly treated, gives us our favorite reds and browns, and, under reducing conditions during the firing, can be made to blossom forth in purples, blacks and other polychrome colors. The terra cotta people do not like him in their buff-colored bodies and white glazes. They do make use of him, however, for the creams and some dark shades.

The family appears in a great many complex forms. They are almost as bad as the big family of Organics, the Smiths of Chemistry. For instances, Father Silica and Mother Alumina dress up for the whiteware industry as $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$, and usually take the water twins $2\text{H}_2\text{O}$ along. In this dress they call themselves "kaolin," or when crystallized with pride, "kaolinite." For the same work they also appear in another guise with the other twins and leave the water twins at home. $\text{KNaO} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$. Oftentimes Calcia goes along and then we have $\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$. For the structural wares, or, as we might say, when the family goes into the brick business, they go in wholeheartedly and all together. Their individual relationships are rather complex, but the chemical analysis shows that the family lineup is very similar to that shown for the average igneous rocks.

The clay fire brick man is like the landlord who puts up the sign, "No children allowed." He is willing that Father Silica and Mother Alumina should come in, but he does not want the fluxing children. When too many of them get to

playing around, their parents have to spend too much time in taking care of them and you know the damage children do to rented houses. Consequently, the fire brick lose their shape and soften in the furnace wall.

The fire brick man likes Mother Alumina better than Father Silica. At high temperatures, the two do not get along as well together as they do separately. Together, they can melt as low as 1,610 degrees C.; Father Silica by himself has a recorded melting point with the Geo-Physical Laboratory at 1,715 degrees C., but Mother Alumina goes to 2,050 degrees C. So it behooves the fire brick man to stir up trouble between our ceramic parents and get some evidence for divorce proceedings. He has several detectives working on the case. They gather their evidence by testing the marriage license with heat. You would think that a combination $\text{H}_4\text{Al}_2\text{Si}_2\text{O}_9$ would be a pretty good sort of a marriage bond, but let's heat it and see what happens. At 500 degrees C. the water twins drop off, leaving one part of Mother Alumina with two parts of Father Silica. Judge Mellor, the English ceramist, says that they are actually divorced at this temperature, but Judge Bleining, the well-known American ceramist, believes that they have only discarded the water twins at 500 degrees C. and have only partially separated at 900 degrees C., forming a silly sort of a combination labeled Al_2SiO_5 or $\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$. This leaves the extra molecule of Father Silica free of any marital bonds. But Mother Alumina awakens to the fact that she is losing her husband and hence we find that at 1,250 degrees C., the sillimanite marriage agreement has been cemented into a definite crystalline structure which persists to its melting point of 1,816 degrees C. Now to have a man partially married to a woman, and yet part of him remaining a bachelor, or better a grass widower, is a sort of a fourth dimension proposition. It is something like a legal marriage with one party seeking spiritual relief. Father Silica, or, better, the divorced part of Father Silica gets his release, but it is necessary to use the high temperature of the electric furnace to help him. It is a regular cremation process. Above 2,000 degrees C., when the whole mass is in a melted and fluid condition, Father Silica actually seems to lose his mind, gets volatile, discards part of his clothing, and leaps into space in the partially undressed condition, known as Silicon Monoxide (SiO). The ceramist feels the disgrace of the situation very keenly and has yet found no ceramic use for this new form MonOX. However, these proceedings are of rare occurrence for but few people are equipped with such high temperature furnaces. Mother Alumina never lets go her hold of that portion of Father Silica which remains but very jealously sees that he is well crystallized into sillimanite as soon as the temperature is low enough, even when the cooling is very rapid.

The abrasive manufacturer has taken advantage of Father Silica's weakness at high temperature and has lured him on with Miss Carbon to form one of those trial marriages. Under the circumstances, the wedding cards were very simple, being merely—"SiC." The Carborundum Company has been well pleased with the results and have advertised this marriage far and wide in both the abrasive or grinding wheel industry and among the refractory users.

In the glass industry, Father Silica has taken Calcia and Enatu-O into partnership to manufacture window and bottle glassware, but he retains about 75 per cent. of the stock of the company. In the silica brick business he let Calcia have only two per cent. of the stock.

The family has adopted a number of relatives and find them useful in glaze and color work. Naturally they are rather distant relatives, but artificially they enter into rather close relationships. Among these are Peebee-O, Zee-en-O, Beea-O and Boric Acid.

The Dyes and colors used by ordinary mortals have been found unfit for ceramic purposes. Our family has found it necessary to prepare a separate list which will stand the high temperatures. Cobalt oxide has been found reliable throughout the usual range of temperature for the blue tones. Chromium oxide is versatile and produces greens, browns and pinks and has a crush on Zee-en-O, Calcia and Tin-Oxide. Copper Oxide provides low temperature greens, and, if fired under reducing conditions, will turn red. Uranium oxide gives orange, yellow, and with cobalt oxide, a high temperature form of green. Antimony oxide gives yellows and creams; nickel oxide, and manganese oxide both give browns, while tin oxide is the best opacifying agent and produces white.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

FIRE RESISTING TESTS AND INVESTIGATIONS.

THERE IS EVIDENCE from the bulletins of the Hollow Building Tile Association that this live wire division of the clayworking industry is carrying on steadily in the matter of testing for fire resisting and other qualities of hollow building tile. Recent tests have included not only fire tests with various shapes and kinds of tile, but also some freezing tests of tile specimens, including both shale products and fire clay products. Some compression and absorption tests have been made, too, and on the whole those in charge of this work of testing and experimenting are carrying on industrially and the result is a steady gaining in definite and positive knowledge of qualities and requirements in hollow building tile.

HOLLOW TILE IN THE HOME.

IT HAS BEEN said before, but it is worth repeating, that an almost overwhelming percentage of the inquiries about hollow tile among the answers to advertising of the Hollow Building Tile Association come from people interested in home building. A check up of a great list of these inquiries now in hand shows more than 95 per cent. of them are from people interested in home building. Others seem to be making inquiry for farm outbuildings. So the home and home surroundings furnish such a list of inquiries as to impress the idea that the home builder of today is thinking some of permanence and is casting about and making inquiry among producers of different kinds of material to get information of value for guidance in home building.

This should not only be cheering news to hollow building tile manufacturers, but it should lead to more interest among them in the study of how to promote tile in home building and of the different ways in which it may be used advantageously.

We know already of three general methods of using hollow building tile in the home. One is to build a hollow tile wall with a stucco finish outside. One is to build a combination of hollow tile and brick wall with a veneer of face brick, and the other is to build a straight wall of hollow tile in comparatively small units making its own face and architectural features. There is in evidence, too, a keenly awakened interest in this latter use. The use of straight tile walls making their own face, especially where there is a desire for that combination of both permanence and low cost in home building.

It is a peculiar fact here, too, that the prospective home builders themselves seem to be more keenly interested in the straight hollow tile wall making its own face than are

the manufacturers of hollow building tile themselves. One explanation of this is that the manufacturers of hollow building tile know something from experience of practical difficulties here, of difficulties involving shrinkage and warping and of maintaining uniformity of size and shape in the products so as to get a smooth straight wall both inside and outside. Using hollow tile for face purpose is a somewhat different thing from using it for fireproofing, for flooring, and for wall backing instead of common brick. The manufacturers who have experimented know this, and the difficulties here caused some hesitancy. On the other hand the prospective home builder not being familiar with problems of this kind, and assuming that hollow tile can easily be made to exact and uniform size and shape, manifests an interest in it as a possible means of securing permanence in building at a cost not much in excess of frame construction.

This interest, too, merits thoughtful attention on the part of hollow tile manufacturers, and persistent experimental work with a view to supplying the needs and developing the use of hollow tile in this manner in so far as it is practical. There are problems to solve here, but they are not insurmountable. And there is a big field of future possibilities both in home building and in the outbuildings on the farms for hollow tile made in unit sizes to furnish its own face.

The present purpose, however, is not confined solely to that of drawing attention to the possibilities of straight hollow tile walls making their own face. The theme here is that of the probable and possible uses of hollow building tile in and around the homes of the future. And it is a timely theme, too, because of the keen interest being taken on the part of home builders as shown in inquiries and responses to advertising. Therefore, it is up to the producers of this material to study carefully and thoroughly the different methods which it can be used, including cellar and basement work, and be prepared to talk hollow tile and its uses here positively and intelligently.

It will not be as easy as falling off a log, nor will the change from other methods of construction come suddenly, because it takes time to introduce new material and get it widely used. There comes to mind now an instance where an aggressive tile manufacturer in co-operation with the local lumber dealer in a country town sold the hollow tile idea and got one home built of it in a town. It was built as a sort of demonstration in the hope that the immediate result would be an active demand for hollow tile from that section by home builders. There was disappointment because an immediate demand was not forthcoming. This was perhaps because hopes were built too high. It takes time to change people from established methods and materials in home building. But it can be done by persistence wherever a

material justifies itself. This the hollow building tile people feel sure they have, and it is therefore just a matter of persistent advertising and educational exploitation to make it eventually a big item in home building.

There are plenty of signs of interest already as shown above by the inquiries coming in from home builders and it is up to the hollow building tile people to follow these up and make a big place in the home building of the future for hollow building tile.

HOLLOW TILE THE IDEAL MATERIAL FOR APPLE STORAGE HOUSE IN THE NORTHWEST.

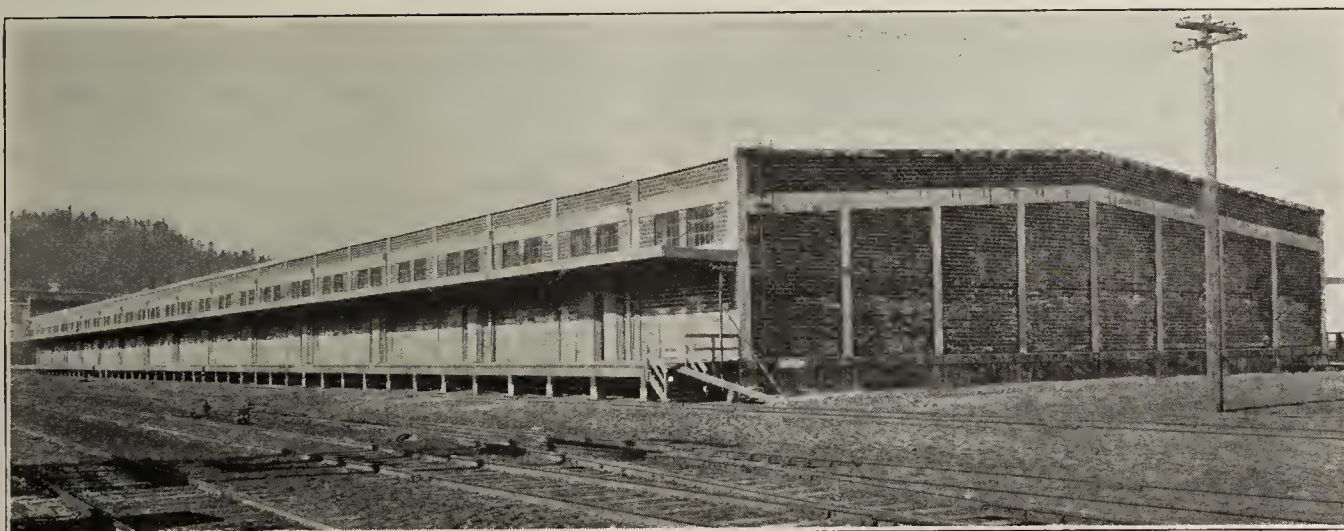
A NEW FIELD OF ACTIVITY has been opened for the manufacturers of hollow tile in Portland, Oregon, which, as nearly every one knows, is the center of Oregon's famous apple district.

Investigations and extensive research work, both by the State Department of Agriculture and private concerns, demonstrated clearly that warehouses constructed of hollow tile and cement proved the best possible storage houses for apples, and an immense storage house, with a capacity of 500,000 boxes of apples, was built according to specifications

platform, 20"x30" openings are provided, with double air space shutters, operated from the car platform. These openings permit a regulated supply of air to enter the 4-foot space below the warehouse floor, for the full length of the warehouse, provide the means for introducing a regulated supply of air into the warehouse proper. Sixty 12-inch improved rotating type ventilators, with dampers, in the roof complete the natural ventilating system. The roof is of double air space construction, accomplished by the use of three layers of tongued and grooved ceiling and two layers of heavy insulating paper, in addition to the roofing felts, which form the upper insulation.

It is anticipated that with this type of construction, including the ventilator doors, floor and roof ventilators, it will be possible to successfully regulate the change of air in the warehouse and to maintain, within reasonable limits, a temperature within each or all of the three sections of the warehouse which will successfully handle all transit shipments of apples brought to this terminal for export.

The insulation afforded by means of the self-contained air spaces is an important feature and is the reason for using hollow tile instead of the other forms of construction which have been used heretofore. The walls are built of Columbia Tile 12



Fruit Storage House Constructed Chiefly of Hollow Tile.

of these two materials, at what is known as Terminal No. 4, in the rear of Pier No. 1. We are indebted to the Columbia Brick Works, of Portland, for the accompanying photograph and description of this mammoth building. It is a single story structure 120 feet in width and 610 feet in length, with ample covered unloading platform space and railroad trackage for the full length on both sides of the structure. The construction is of what may be termed composite double air space, the foundations of concrete and the exterior walls and intermediate firewalls of hollow tile and concrete.

The ventilated warehouse is divided by transverse fire walls into three sections, each 200 feet in length, and each fire wall is equipped with two fire doors, to preserve the double air space feature. Double insulated refrigerator type doors are provided at 40-foot intervals in the side walls for access by trucks or conveyors from cars. Double air-space doors, or shutters, are installed at all windows for closing the window openings, when temperatures are to be maintained which would not be possible with the glass area exposure.

The ventilating features of the warehouse are as follows: At 20 foot intervals along the sidewalks, under the loading

platform, 20"x30" openings are provided, with double air space shutters, operated from the car platform. These openings permit a regulated supply of air to enter the 4-foot space below the warehouse floor, for the full length of the warehouse, provide the means for introducing a regulated supply of air into the warehouse proper. Sixty 12-inch improved rotating type ventilators, with dampers, in the roof complete the natural ventilating system. The roof is of double air space construction, accomplished by the use of three layers of tongued and grooved ceiling and two layers of heavy insulating paper, in addition to the roofing felts, which form the upper insulation.

Through the use of proper ventilation, keeping the ventilators closed during the day and open at night during the warm weather, and reversing during the cold weather, it is possible to keep the air in these warehouses fresh and pure at all time, which naturally adds considerably to the life of the apple.

Mr. H. R. Kreitzer, secretary of the Columbia Brick Works, in commenting on the hollow tile warehouse, writes:

"The use of hollow tile has been very highly developed in the Pacific Northwest for buildings devoted to the use of fruit and vegetable conservation, and it is our opinion that the use of tile throughout the country will be very greatly increased as its value for this particular class of construction becomes better known. We have given this particular class of business our attention during the past ten years and have found it has added much to our volume of business, widening our shipping radius way beyond what we expected to get in ordinary building construction."

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Four. ORDER SYMBOLS.

THE METHOD OF treating all activities of the plant as if they were individual jobs covered by an order compels us to adopt some system of symbols with which to identify each order. This system has to distinguish between the actual productive labor and the non-productive.

There are several methods which may be employed. One is the simple lettering of every order A, B, C, D, etc. The difficulty with this method is that within a short time so many letters are required to identify the orders that it is easier to write all the details out. The second method is by the use of mnemonic symbols. These are name symbols. For example, the identification for gasoline for trucks or tractors, would be g. t. The mark for stock insurance would be s. i. Personal property taxes would be identified as p. p. t. On the productive orders this method would cause confusion as it would be difficult to distinguish one week's work from the next without the repetition of letters and without resorting to a great many letters to distinguish one order from another.

The Dewey System.

A third method which may be used is the Dewey decimal system. By this method all productive and non-productive work would be charged to 01. The salary of the president would be charged to 011. The salary of the secretary, to 012. The salary of the bookkeeper to 013, etc. This is an excellent method. It is by far the simplest because it may be expanded indefinitely without becoming too complicated. In order to be practical for the clayworker, it has to be modified somewhat.

All expenditures made by the plant would have to be charged either to productive orders or expense orders. To distinguish between these charges, all productive order numbers are simply numerical and all expense order numbers are prefixed by the letter E.

The expense order code will be arranged by classes such as, salary, office expenses, repairs, supplies, etc. The productive order code will be arranged by product, where there is more than one kind of ware being turned out, or by time, where the production is uniform throughout. The cost cycle under the system to be outlined in these articles will be a thirty day or monthly period and where the time element is used all work done in January will be identified by the number of that month and a consecutive number of the order and 011, 012, 013, etc. Those orders completed in December will be numbered 121, 122, 123, etc.

The Expense Order Code.

All indirect expenses are divided into two general groups—the office expenses and the plant burden. The purpose of this separation is twofold. First, it makes possible a readier detection of waste and unnecessary expense; second, it permits a more scientific application of the burden. Later on, in this discussion, the burden will be grouped according to production centers, but for the sake of illustration of the order symbol method of identification, all expenses are

lumped below. The list of order numbers given is by no means fixed. It may be expanded or contracted, according to the size of the plant, but it should be understood that the more detailed the classification of expenses is, the easier it will be to obtain accurate costs. It involves hardly any more work.

Office Expense Orders.

E011—Executive salary—charge this account with all salaries for the president and other executive officers.

E012—Clerical salary—charge this account with all salaries for the bookkeeper, stenographer and other clerks employed.

E013—Office supplies—charge this account with the cost of postage and office supplies.

E014—Traveling expense—charge this account with the money spent for transportation and other necessary expenses incurred while securing orders.

E015—Advertising—charge this account with the payment for advertising in magazines, periodicals, etc.

E016—Commission—charge this account for all payment for commission to salesmen.

E017—Association dues—charge this account for membership fees in trade associations, business clubs, etc.

E018—Printing and stationery—charge this account with all printing and stationery except that used by the plant as distinguished from the office.

E019—Telephone and telegraph—charge this account with all telephone and telegraph bills.

E0110—Charity.

E0111—Miscellaneous expense—charge this account with all office expenses not taken care of in any other way.

Expense Burden Order Code.

E021—Salary of superintendent—charge this account with the cost of supervision of all departments.

E022—Foreman—charge this account with the cost of the salary of the departmental foreman.

E023—Salaries of clerks—charge this account with the timekeepers, stockkeepers and other clerks, if any.

E024—General labor—charge this account with the wages of all general or indirect workers.

E025—Repair to buildings—charge this account with all labor and materials used in repairing any part of the building.

E026—Repair to machinery—charge this account with all labor and materials used in repairing any part of the machinery.

E027—Repair to tools and other equipment—charge this account with all labor and materials used in repairing or replacing tools or other equipment.

E028—Maintenance and transmission—charge this account with all labor and materials used for repairing or replacing transmission line from the power house and with building and other transmission gear.

E029—Printing and stationery—charge this account with all the cost of printing time cards, material, records, order records and all documents used by the plant.

E030—Gas—charge this account with all payments for gas where this is used for burning.

E031—Electric current—charge this account with all payments for electric current, both for light and power.

E032—Coal—charge this account with all payments for coal.

E033—Charcoal—charge this account with all payments for charcoal.

E034—Stable expenses—charge this account with the cost of maintaining the stable and horses.

E035—Maintenance of truck—charge this account with all repairs and replacements to truck.

E036—Gasoline—charge this account with the cost of gasoline.

E037—Drivers—charge this account with the salary of the drivers.

E038—Depreciation—charge this account with the monthly depreciation charges for all machinery and equipment.

E039—Depletion—charge this account with the monthly depletion charge for the clay mine. The manner in which this charge is arrived at will be explained fully later on.

E040—Interest on plant production—charge this account with the interest on machinery and equipment in clay. This subject will be treated in detail later on.

necessary to perform the various operations successfully, rather than from the number and intricacies themselves. Consequently, the forms designed must bear these factors in mind. They should cover the following points:

1. They must be extremely simple. The average worker has a strong personal dislike for forms. He thinks they belong to that vague, indefinite sphere known as "red tape." Consequently, if he is called on to make a lot of entries, he will either refuse to fill the reports out altogether or, if he cannot do this, he will make out these reports in such a half-hearted manner that whatever value they might have is nullified.

2. They must be planned so that the correct information will get back to the records. A report that invites error is a waste of time and money.

3. They must furnish a comprehensive report of the work done. Progress on job can be measured only by means of forms that will enable the operator to compare the actual work done with the schedule of production.

4. They must distribute the expenses so that the cost of each lot going through is clearly shown.

5. They must be few in number.

6. They must be designed with the possible future expansion of operation in mind.

PRODUCTION ORDER																															
Description of Unit																															
Applied from schedule																															
Issued to Dept																Signed															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	X
DATE ISSUED				DATE TO BE COMPLETED				ARTICLE																QUAN. ON ORDER				ORDER NO			

A Miniature Sketch of Production Order Record Sheet.

E041—Stock insurance—charge this account with all the insurance against fire, theft or anything else except liability and compensation which must be charged directly to labor.

E042—Miscellaneous expense—charge this account with all expenses not already provided for.

The production orders are identified by the month. This method has several distinct advantages. 1. It establishes the basis for easy comparison of costs by season. 2. It automatically fixes the procedure of putting the plant on a monthly cost basis, which tells the operator where he stands once a month.

So far we have dealt only with the externals of the cost system. We have determined the elements of costs and broken them up into groups. We have classified the records of the property owned and the charges against these records. The operating costs divided into direct and indirect expenses. Indirect expenses were carefully analyzed and an order code to charge accounts was set up for them.

We have not yet indicated the medium through which the information of these various expenditures reach the records. This is done through forms of one kind or another. It is recognized that these forms should be designed with the special need of the clayworker in mind. A clay property is really a very simple matter to operate. The complications come from the amount of technical knowledge

The task of providing necessary forms is difficult because the majority of plants are so small that more than one clerk is not warranted, and it is, therefore, necessary to introduce as few forms as possible to induce the operators to use them. The task is precarious because the small plant owner dislikes using forms and in some cases is sure to neglect them. When that happens the forms will be taken to symbolize the whole system and it will be said that the plan had failed or that it is not practical. But this consideration does not deter from going on with our efforts to establish standardized costs for clayworkers. We are making an effort to instill the spirit of scientific business management into the operators of clay property.

Let us now consider the character of the documents referred to above. They fall into three general classes.

1. Instructions to do work.
2. Records of material and other expenses incurred.
3. Reports of work done.

Instructions to do work may take the form of the production order mentioned before. This order must be written. A verbal order is very undesirable. The secrets of a successful management of employes is to be able to fix the responsibility for errors promptly but justly. A verbal order invites "buck passing" whenever anything goes wrong. More impor-

(continued on page 608.)

THE ESSENTIALS IN MEETING COMPETITION.*

Ross C. Purdy, Secretary, American Ceramic Society.



ONLY EFFICIENT, if not the only possible way of meeting the competition of alternative products is by manufacturing the best quality of ware at the lowest possible cost, and by cultivating a demand, and by marketing under the most favorable conditions. It is a demonstrated fact that manufacturers individually can not effectively and efficiently cope with such problems. Either the individual manufacturers must pool their interests in these problems through an association in which each retains his identity and individuality, or they must leave the field to the larger financial combines.

Trade associations are legitimate offsprings of competitive manufacturing and marketing of alternative goods. Twenty-five years ago there were no ceramic trade associations; today each type of ceramic product is represented by an association. Twenty-five years ago there were very few trade associations of any sort; today, in this country, there are nearly 1,500 of them. The war conditions brought out clearly the advantages of manufacturers of like goods being associated together, the advantage being alike in the interest of the public and the manufacturer.

It is estimated that six millions of dollars will be spent on building, in this country, in 1923. All building supply concerns, and labor, are on their toes with expectancy of big profits in 1923. Under such boom conditions the need of manufacturers associating together are not so evident. Experience should tell us, however, that deflation is always just around the corner, out of sight; hence, out of mind. Deflation and inflation alternate over rather short time periods and the future well-being of any group of manufacturers lies in the continuous investment, through both periods, in association activities. It is through associations that selective demand for your product will be created, and it is through co-operative researches that your manufacturing, marketing and distributing costs will be minimized. I hope to convince you that through both good and hard times, your support of associate enterprises should continue unabated.

We could review the situation from three standpoints:

- (1) Economy in manufacturing.
- (2) Economy in distribution.
- (3) Creating of a demand.

I will dwell only on the first of these.

Citations could be made almost without limit of the industrial value of published researches. One cannot name a single manufactured thing that does not represent the pyramiding of apparently unrelated investigations made known through cumulative researches. The railroad, the ocean steamer, the telephone, the telegraph, the dynamo, the brick and tile machines, the dryers and kilns are striking examples of pyramiding the product of several investigations.

The dependence of each and every manufacturer on research and upon the agencies through which the results of researches are made known, and by whom the facts are pyramided into a definite industrial process, equipment or material, is absolute and easily traced in each case. It is idle to deny the direct benefit to manufacturers of these research enterprises.

A large number of manufacturing corporations are investing thousands of dollars in support of research agencies; not

through taxes altogether, but by voluntary subscriptions to universities, to research councils and to technical societies; and it is worthy of note that it is those corporations which invest the most in fundamental and industrial research that enjoy the most rapid and the most substantial business growth.

That country will be the strongest industrially whose manufacturers are co-operating in research on an intimate and broad-gauged plan. I am willing to submit that the future welfare of the individual brick and tile manufacturer, nationally considered, is dependent upon a closer co-operation in technical research.

Why should brick and tile manufacturers undertake researches jointly? Why should each concern not work independently, keeping unto itself each and every bit of information? Let me ask just the reverse of that question, and submit that no manufacturer has a secret process or method than cannot be and perhaps is already duplicated or greatly improved. The plate glass manufacturers guarded their man-



Ross C. Purdy, Columbus, O.

ufacturing secrets very closely, yet, when Henry Ford found it necessary to manufacture a portion of his glass requirements his men devised and built a factory complete that was so far ahead of the established plate glass factories in economies as to almost entirely revolutionize the process.

Prior to the war Germany was gaining an industrial supremacy in many lines. In the early years of the war her fighting strength per man was far superior and better sustained. The industrial and military advantages possessed by Germany is generally, and, I believe, truly credited to the fact that her manufacturers were co-operating very intimately on manufacturing research program, as well as in standardization of product. Her research agencies gathered every bit of information and placed them together into industrial processes.

It has often been said, and citations at great length have been made in substantiation of the idea, that Germany did not originate, did not make scientific contributions to any such extent as did the other countries. It has been freely admitted, however, that German technologists did outdo those of all other nations in industrial application of technical and scientific facts, and this was because her manufacturers were

*Address before the Nebraska Brick and Tile Association, Lincoln, Neb., March 7, 1923.

co-operating in industrial research on a scale not practiced in any other country.

Since the war twenty-six different groups of manufacturers in England have organized research associations. Many of them have built and equipped large laboratories. Each of the groups of manufacturers, competitors in trade, are co-operating on investigations of the fundamental scientific and engineering problems, studying resources of and specification for materials, making critical study of processes, equipment, and factory planning, and in other ways co-operating that their entire membership may be manufacturing the highest quality at the lowest cost.

Some of the English Industrial Research Associations have purchased large residences which they have remodeled and equipped, others carry out their investigations, exclusively, in existing institutions, such as the National Physical Laboratory, Sheffield University, other universities, colleges and technical schools.

This scheme, on which the English Research Associations are managed, is the same as several industrial groups in this country have in their co-operative arrangements with Mellon Institute.

Three of the Industrial Fellowships now in operation at Mellon Institute have been effective for ten years, and twenty-one others have been continuing for three or more years; and eleven are now in their second year of operation.

Similarly, we could cite increases in industrial co-operative researches with the federal bureaus. Several of the state universities are likewise being brought into closer contact with the industries through co-operatively supported researches, and the private consulting laboratories are finding each year an increasing demand for their services.

Co-operative research, on the part of groups of manufacturers of like product, either with established research and educational institutions, or in their members' plants, or in a special laboratory, is recognized today as an essential to industrial progress.

Manufacturing firms can no longer live unto themselves in technical matters relating to manufacturing anymore than can they in matters of traffic, tariff and trade. Manufacturers are learning that their industrial advantage over their fellows rest more in financial resources and business management than in special methods of manufacturing. Co-operative research enterprises do not involve patentable methods and equipment, hence, it does not mean that concerns will give to their competitors in trade the advantages of their inventions without just considerations. Co-operative research does not eliminate individual and inventive resourcefulness.

J. J. Carty of the Amer. Tel. & Tel. has said: "In the present state of the world's development, there is nothing which can do more to advance American industry than the adoption by our manufacturers generally of industrial research conducted on scientific principles. Those who are the first to avail themselves of the benefits of industrial research will obtain such a lead over their competitors that we may look forward to the time when the advantages of industrial research will be recognized by all."

The working out of plant economies require the investment either of a long time or a large amount of money, neither of which the small operators can today afford. By investing in support of associations, both local and national, these problems can be solved with an expenditure of time and money within the possibility of the small manufacturers. The saving of from 20 to 30 per cent. in the cost of burning of a kiln of brick without changing the kiln, fuel or labor, as was demonstrated by the co-operative research of the four national associations of manufacturers of heavy clay products

(hollow tile, common, face and paving brick) could not have been worked out by any other than the larger corporations, and, if by them, the method of affecting so large a manufacturing economy would not have been broadcasted for the benefit of the whole industry.

What is most needed to improve conditions in the brick and tile industry is education. The world has accumulated a lot of knowledge, but not much of it is available to the masses. Why? The getting of knowledge is not at all difficult. Our modern educational facilities leave no one with an excuse for not acquiring knowledge. But the mere acquiring of knowledge will not profit any one. It is only when the knowledge is made effective as a working tool in the solution of our work problems that it becomes worth while. This is education. Acquiring knowledge is essential to education, but education, i. e., learning how to accomplish things, is a vastly different thing than a mere accumulation of knowledge. It is because the masses have not the inborn ability to acquire an education that the world's vast store of accumulated knowledge is not available to them. There are many college graduates (altogether too large a percentage of them) who acquired, temporarily, sufficient knowledge to pass examinations, but who are not in any sense of the term educated, and there is a surprisingly large number of men and women who have acquired a large fund of knowledge without the aid of schools because they have the ability to put each bit of knowledge acquired to a useful purpose; they are educated. There is a large fund of scientific knowledge, i. e., proven facts that is not available to the factory operators and there is a large fund of practical knowledge that is not available to scientists. The preventing factor in each of these cases is time and opportunity.

The bread-makers could not make the same quality of bread in all places until they united in the employment of a research organization and investigated the materials and conditions in all parts of the country. Today they are making a yeast food, in Mellon Institute, with which bread and biscuits of uniform quality are made everywhere. It required the opportunity of the scientist to learn and to analyze the knowledge which the bakers in the different geographic centers had acquired before he could discover the underlying causes. This knowledge is today possessed by bakers generally. It was through co-operative research by men and organizations with ability to marshal facts and to make applications of the knowledge thus acquired that the secret of uniform quality of bread was disclosed. No one person or manufacturing concern could have formed the solution of the problem.

Inventors are the world's greatest benefactors. McCormick's farm machines released millions of men from the farm to the factories. In place of expending the greater part of the world's available human energy in the production of the necessities of life which are consumed from day to day, it is now being spent in the production of permanent wealth.

F. J. Leavitt invented the first machine for making tin cans. Tin cans are now so cheap that fruits, meats, vegetables and fish are available to the masses the year around. Salt pork and dried vegetables are no longer the only winter diet for the poor.

The enumerations of the inventions that have added greatly to the material prosperity, comfort and well-being of man would require hours of time or volumes of books.

No invention has been perfected except through the pyramiding of the observations and experiences of many collaborators. Co-operative research organizations are demonstrating that improved methods and machinery are a natural consequence of unselfish collaboration of manufacturers. In no manner can economical methods of manufacturer be more

surely and quickly discovered than by a systematic investigation of the conditions and the methods in a large number of plants manufacturing the same kind of ware. Co-operative researches supported by associations and employing the services of an established laboratory of proven ability will result in improved equipment and methods and in the making available of these to the small manufacturer. I know of no other way that small manufacturers can secure these benefits except through associated enterprises.

I have not mentioned the manufacturers of equipment nor the trade press as contributors to the welfare of the individual manufacturer. I recognize them as large contributors to clay-working knowledge. We owe much to them and are dependent upon them to a very large extent for our future progress. They, however, are established in the minds of all through several years of service.

It is to the associations, the colleges and the public laboratories that I am at this time directing your attention. I urge you to support your local association, for here you have problems peculiar to your territory on which you can profitably co-operate.

I urge you to support your respective national trade associations, for through them you can work out the larger problems of sales engineering, advertising and new uses of your products and thus better compete with other products. The solution of the national problems of trade, tariff and traffic, peculiar to your industry, needs the individual support of every manufacturer, no matter where located. But of equal importance, it is profitable for individual manufacturer to support the co-operative technical and scientific researches financed jointly by trade associations and government bureaus, and such semi-public institutions as Mellon for it will be only by investigations thus made possible in a large number of plants that processes and equipment will be found whereby you can manufacture at a lower cost, thus meeting the competition of alternative products.

I urge your support of the collegiate ceramic departments. They are preparing young men to serve your industry by drilling them into systematic ways of using fundamental scientific facts to the solution of ceramic manufacturing problems. Graduates from the colleges are not as well educated as are you who have been manufacturing successfully for years, but they have the foundation and the systematic methods of marshalling facts and thus are able to quickly grasp your problems and bring to their solution much of the world's knowledge that otherwise would not be readily available to you. Not all of the graduates can thus assist you, for alas, some of them have not the required carrying and analyzing ability; but the fact that the colleges can not meet the demands from ceramic industries for their graduates is proof that the vast majority of students have proven to be of value.

I urge that you assist the college departments of ceramics in keeping in close touch with manufacturing problems, so that they will be able to better direct the students in their preparation for service.

I urge your support of the Bureau of Standards and the Bureau of Mines in their efforts to assist ceramic manufacturers. Political influences, without knowledge and regard of the services which these bureaus have rendered and are capable of rendering the ceramic industries, oftentimes cripple them in their service.

The federal and individual state geological surveys have rendered ceramic industries a large service in locating and testing materials. Their contributions to ceramic knowledge have been large and beneficial.

To all of these agencies I urge your support, each having

proven capabilities of large service to ceramic industries.

The American Ceramic Society is another collaborator with all these other agencies, directing its best efforts to promoting all agencies that will add to the sum total of ceramic knowledge and convert the knowledge so accumulated into serviceable education. It aims to serve the plant operators who have not had the advantage of collegiate training and it gives the college boy opportunity for post-graduate study while engaged in plant operation. This it does through publication of original researches, abstracts of the world's current literature, bibliographies of all literature on specific subjects; and through compilation of proven data and facts. Its service committees on research, standardization and data are collaborating with universities, research organizations and the technical and scientific associations of all countries, and is in close working collaboration with the several trade associations in technical research. Its membership is made up of executives, plant managers and superintendents and the technical men employed in plants; university and government technologists; equipment manufacturers and material distributors of all the ceramic industries. When one considers the problems had in common by the manufacturers of glass, enameled ware, pottery, floor tile, terra cotta, brick and tile and refractories, he will see the advantages of all ceramic industries and all ceramic associations and research agencies having one strong central organization, the sole purpose of which is to collect, analyze and publish technical and scientific knowledge. I urge, therefore, your support of the American Ceramic Society.

These are the agencies that will solve the problems that are vital to successful meeting of competition: Your local association, the national trade association, the universities, the federal and state research departments, the technical and trade journals and the organization which is common to all in its interest in technical and scientific problems of ceramic manufacturing—the American Ceramic Society.

Given a well balanced plant with an easy working clay, an efficient management of plant and finances, we have the making of a fair living. All of these, plus initiative to profit from the world's store of knowledge, you will have a comfortable living, plus a growth into a position where competition even with your fellows is most easily met. A disregard of the new inventions and most economical methods and processes are as fatal to a plant as is mismanagement of its financial resources.

KENTUCKY GROUP MEETING.

A GROUP or district meeting of the Kentucky Clay Products' Association was held at the Phoenix Hotel, in Lexington, May 9. The purpose of the meeting was to discuss freight rate matters in the southern territory and other subjects of interest to the brick trade.

J. T. Howington, of the Coral Ridge Clay Products Company, Louisville, chairman of the Traffic Committee, reviewed the past efforts in freight matters, and explained the plans of the Kentucky Association to compile records of shipments made and freight paid, which will be extended to show that the proposed new rates will mean an increase. This will furnish something positive and definite with which to make a future plea to the railroads for a fair deal.

There followed also considerable round-table discussion of technical and practical matters pertaining to brick burning, and the exchange of ideas and suggestions of this kind proved surprisingly interesting and good.

After two hours of round-table discussion there was a formal organizing of an Eastern Kentucky District group,

with W. H. Hall, of the Maysville Brick Company, as chairman, and F. O. Schneider, of A. H. Schneider & Sons, Nicholasville, secretary. The plans are to have another Eastern District meeting soon, probably at Middlesboro some time in July.

All those attending reported that they are busy at work now with orders ahead and no surplus stock on hand.

Those attending were: J. T. Howington, Coral Ridge Clay Products Company; T. Bishop, Southern Brick & Tile Company, and J. Crow Taylor, all of Louisville; H. T. Miles, Spahr Brick Company, Maysville; W. H. Hall, Maysville Brick Company; L. L. Richardson, Barbourville Brick Company; F. O. Schneider, A. H. Schneider & Sons, Nicholasville; M. M. Clay, Clay-Ingels Builders' Supply Company, Lexington.

HOLLOW TILE HAS NEW YORK OFFICE.

THE HOLLOW BUILDING Tile Association recently announced the opening of its New York office in Suite 308-51 East 42nd Street, with William S. Roberts in charge. Mr. Roberts is not a new man in the association, as he has had service as representative in group 3 since last November. Mr. Roberts succeeds in the association work Mr. W. W. Montgomery, who resigned from the association work to open an office of his own at 108 North State Street, Chicago, where he is engaged in handling building material under the slogan "Service With Experience."

THE A. S. T. M. PROGRAM.

The program for the 26th annual meeting of the American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., June 25-29, shows that there will be plenty doing and a fair share of it of interest to the clayworking industry. Among other things Committee C-10 on Hollow Building Tile will report, as will also Committee C-3 on Brick, Committee C-4 on clay and cement sewer pipe, Committee C-6 on Drain Tile, and Committee C-8 on Refractories. These reports are scheduled for the 10th session on the program, which is June 28th in the evening, beginning at 8 p. m. The same session includes reports on cement, lime and gypsum.

The chairmen of the various committees in clay products which will report are as follows:

Committee C-3 on Brick, T. R. Lawson, chairman.

Committee C-10 on Hollow Building Tile, W. A. Hull, chairman.

Committee C-8 on Refractory, R. C. Purdy, chairman.

Committee C-4 on Clay and Cements, Sewer Pipe, Rudolph Hering, chairman.

Committee C-6 on Drain Tile, Anson Marston, chairman.

Those interested and contemplating attending who have not already received programs should write to the American Society for Testing Materials, 1315 Spruce Street, Philadelphia, for program and other literature pertaining to the meeting.

COMPARATIVE MASONRY TESTS.

The Columbia University of New York City has issued a special pamphlet, being Bulletin Number 12, under the date of April, 1923, covering comparative tests of clay, sand, lime brick and concrete masonry. The bulletin was prepared by Albin H. Beyer, associate professor of civil engineering, and William J. Krefeld, instructor of civil engineering at the university. It gives pictorial charts and tabulated results of crushing and absorption tests on piers made of standard brick, cement brick and sand lime brick, and should prove a good addition to technical library of those in the industry, either producing or using brick.

POINTERS ON TRUCKING BRICK.

EVIDENCE IS COMING to light that high wages play a more important part comparatively in the cost of hauling and delivering brick than in the process of manufacturing. As a result those who keep careful record of cost are finding that their drayage cost amounts up considerably and deserves close watching lest they absorb a part of the profit margin.

A group of manufacturers and dealers were discussing the drayage cost at a luncheon meeting recently. It was in a city where the usual basis of figuring is \$3.50 a thousand for delivering face brick. One man in the group who had been hiring trucks on an hourly basis in making his deliveries found that he was going in the hole on the basis of \$3.50 for handling face brick.

Another man in the group told of making a contract with a teaming concern to haul his face brick on the basis of \$2.00 a thousand for the first mile, and 50 cents for each additional mile. This proved some saving over his previous cost, but the people were neither properly equipped nor well experienced in the handling of brick, and the result was unsatisfactory work and complaints from customers, so he had to give it up.

One interesting suggestion coming out of the discussion was that the Fordson tractor with trailer trucks makes a good combination for brick handling, because you can keep the tractor going and have trailers being loaded at one end and being unloaded at the other end, thus making more mileage with the tractor and saving it from that idle time which eats into the expense account.

Another idea brought out was that in trucks and trailers for brick handling, either drop or removable sides are an advantage as it makes it easier to get at the load if clamps are being used, and makes it easier and quicker even if the unloading is being done by hand. There are enough interesting points here about the convenience in unloading to suggest the advisability of developing a truck and trailer body adapted specifically to the handling of brick. It may well have a dump feature for common brick, and with it should be combined a drop or removable side feature for convenience in handling face brick between the trucks and the pile.

There is enough interest and discussion manifested today in connection with trucking to make the brick industry an interesting field for those truck and truck body manufacturers who are seeking to develop vehicles and bodies to fit in with each particular need. The trucking of brick and hollow tile makes a field of big possibilities for truck sales and service. And therefore it should invite special study on the part of truck manufacturers and dealers.

A listening in at this discussion brought also the impression that it is sometimes more difficult to figure out the drayage cost than it is to determine the manufacturing cost of brick. Also that unless the brick man keeps careful record of his costs here his so called free deliveries may eat up a goodly part of his promised profit in the brick business. There are times now when it seems to cost as much to deliver brick to the job as it did cost at one time to manufacture brick.

And it doesn't help any to blame it on the motor truck as an expensive proposition. Broadly speaking the truck offers economy. The heavy cost today comes from high wages to truck drivers and to brick handlers. And the problem is to figure out ways and means to get more efficient service out of both. Where there are made streets or good roads trucks eat up distance rapidly, and it is easy now to make deliveries over long roads which in the old days with teams would have been slow and burdensome. So the truck is serving its purpose, a splendid purpose, and it is destined to grow in use and take on some forms of new de-

sign and detail to fit in peculiarly with the needs of the clayworking industry. Right now, however, it will pay every manufacturer of clay products to check up carefully on his drayage cost and then to investigate that he may find out whether or not he has the efficient service here that is necessary for minimum cost in handling.

AN ATTRACTIVE DISPLAY OF FACE BRICK.

MUCH THOUGHT and ingenuity has been devoted to the arrangement and display of face brick, for show purposes, by brick salesmen, desiring to present to prospective builders the attractive features of up-to-date products showing new shades, color schemes and textures.

"SEMI-FIRE RESISTIVE."

LUMBER manufacturers through their associations in co-operation with the organized metal lath manufacturers have had a series of studies made and a report recently issued by the Underwriters' Laboratories on the feasibility of designing frame buildings for residence and similar purposes so as to make them "semi-fire resistive." The report goes into detail of where and how to use metal lath in connection with frame construction to lessen the danger of fire. One of the interesting things about it all is that careful use of language in the term "semi-fire resistive." This means that it will "sorter" resist fire and "sorter" not. They don't even get it strong enough to say semi-fire proof, but it is just



Exhibit of Face Brick of Sunderland Brothers Company, Omaha, Nebr.

Never before, since King Tut's time, has there been such an excellent quality and varied selection of building brick as that offered to the builder of today. Color schemes worked out in building brick are now possible that were never dreamed of in years gone by.

An excellent illustration of this is shown by the accompanying photograph of a brick display recently made by the Sunderland Brothers Company, at Omaha, Neb., pioneer dealers in front and ornamental brick in that vicinity to whom we are indebted for the illustration.

One trouble with a whole lot of us is that we are concerned too much with what we may get for our labors and not enough with what we may produce or earn with them.

half way resistive, perhaps on the theory that half a loaf will be satisfactory. It sounds a bit like metal lath propaganda into which the lumber people have been drawn in the hope of bolstering up their own advocacy of frame buildings and at the sacrifice of one of their own items, that of wooden plastering lath. There goes with it an interesting question of how long it will take the building public to awaken to the fact that this half a loaf is not satisfactory, and that the real way to put fire resisting qualities into the home is through use of structural materials which will not furnish fuel for fire. It is a known fact that wood studded walls make dangerous fire traps, and this is true even when they are plastered on both sides. More and better fire resisting qualities will be added to any home by making the

first floor fire-proof through the use of hollow tile. These and brick are not merely semi-fire resistive, but they have enough in the way of beauty and permanence to justify their use.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BUILDING OPERATIONS in Evansville and many other cities and towns in southern Indiana are unusually active and a great deal of construction work is now under way and a great deal more is being planned for the summer and fall months. Many brick men and contractors are of the opinion that 1923 will witness more building than any other year since the close of the world war. There is a great scarcity of bricklayers, carpenters and other skilled mechanics at Evansville, and some of the contractors in that city have been advertising in southern newspapers for workers. The contractors in Evansville early in the spring voluntarily increased the wages of the bricklayers from \$1.15 to \$1.30 an hour. There is a great deal of home building now going on in Evansville, which, it is hoped, will relieve the house shortage that has existed for several years past. Many of the homes now under construction or being planned, will be built of brick.

Henry Koch, 67 years old, of Newburg, who for many years owned and operated a tile factory there, died at his home in that town on April 26. He was well and favorably known to the trade in southern Indiana, and is survived by his wife, one son and one daughter.

G. C. Landgrebe, general manager, and T. H. W. Hilsmeier, superintendent, of the Huntingburg Pressed Brick Company, at Huntingburg, have returned from St. Louis, where they attended a division meeting of the American Face Brick Manufacturers' Association.

Prospects for the location of a factory in Grayville, Ill., for the manufacture of hollow building tile, are being developed by R. H. Eastwood, in co-operation with the Chamber of Commerce and the Development Bureau of the Illinois Central Railroad. A Chicago manufacturing company has been interested in the shale deposits south of Grayville, according to recent reports from that city. Several representatives of the company have been in Grayville recently making an inspection.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Company, has been elected president of the Rescue Mission at Evansville for the ensuing year. Mr. Andres is active in church and Sunday-school work.

Gus Nusbaum, of Louisville, Ky., has purchased the face brick and tile factory at Loogootee, Ind., from John Nadding, of Lawrenceville, Ill., paying the sum of \$8,500 for the property. It is expected he will reopen the plant within a short time.

Mrs. Louise Suhrheinrich, mother of J. L. Suhrheinrich, foreman of the Standard Brick Manufacturing Company, at Evansville, died a few days ago, at Kansas City, and the body was brought to Evansville, her former home, for burial.

The Owensboro Clay Products Company, at Owensboro, Ky., that has been in operation for some time, has filed articles of incorporation with the county clerk at Owensboro. The incorporators are: John A. Bolger, secretary and treasurer; Ben F. Medley, president, and H. B. Eagles, vice-president. The company is to manufacture vitrified and common brick, drain tile, etc. For several weeks they have been making brick at the plant of the Owensboro Sewer Pipe Company.

The city council at Tell City has passed an ordinance for the building of a sewer system for that city. The big sewer with laterals will be about two miles long and a part of it will be a six foot sewer. The sewer is necessary because of the growing demands of the city.

Work is being rushed on the new addition to the Cannelton Sewer Pipe Company, and when the addition has been completed a large number of additional workers will be employed at the plant. The Clay Products Company, at Cannelton, is having a nice run at the present time and business in general never looked better, according to reports from that city.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company, who has been appointed by Mayor William H. Elmendorf on the port commission, under the provisions of an act of the last session of the state legislature, has several plans for the building of modern river and rail terminals in the harbor at Evansville. Mr. Kleymeyer is one of the original boosters for the improvement of the Ohio river.

Incorporation papers have been filed with the secretary of state, at Springfield, Ill., for the McLeansboro Shale Products, at McLeansboro, Ill., located on the Louisville and Nashville Railroad in that city. It is expected that all capital stock for the company will be subscribed by the time this article is printed. C. C. Wright is the president of the company, and he has long been a booster for the development of shale products in southern Illinois. E. C. Vor Beck is the vice-president and general manager of the company. He is an experienced brick and tile manufacturer, having been interested in shale products for a number of years. O. H. Hyatt is secretary-treasurer of the company.

This company has been capitalized at \$50,000, every dollar of which will be devoted to the development of the new plant, there being no cost whatever to selling the stock.

A HOOSIER.

CARS FOR CLAY PRODUCTS.

Shippers of brick and other clay products perhaps have more than their share of trouble in securing cars these days. This, of course, is partly because of the heavy traffic, but it is also partly due to the development of new types of coal cars which are not adaptable to the shipping of clay products.

Most of the new coal cars ordered by railroads these days, sometimes in thousand or two thousand lots, are steel hopper bottom cars. These can be used for sand and gravel and other material that can be dumped, but they do not fit in with the requirements for brick, hollow building tile, sewer pipe and drain tile. These products call for flat bottom gondola cars, box cars, or for stock cars. There is developing an acute shortage in the available flat bottom gondolas, simply because these are no longer extensively used in coal shipping. Most of the coal shipping of today is being done in hopper bottom cars and the steady and persistent development of this type of cars for coal handling is creating a rather acute situation in the matter of proper cars for handling clay products.

There is probably today not a place in the country but what brick and tile men are having trouble getting cars. As stated above, part of this trouble is due to the heavy traffic and the inability of the railroad to handle it promptly. The big trouble, however, the one that merits some attention and will probably eventually necessitate some special appeal to the railroads is in that many of the new cars for coal traffic are not adaptable to traffic in clay products, consequently unless some consideration is shown to the needs of the clay workers in the matter of providing new cars the difficulties here will increase with time and be with us even when there are no special peak periods in general railway traffic.

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing the Commissioner of Patents, Washington, D. C., and enclosing 10 cents for each patent wanted. In ordering, give patent number only.]

No. 1,442,585. Clay Flux. Bernhard Schmidt, Milwaukee, Wis., patentee.

A flux for clay, including pulverized glass, salt, pulverized granite and oxidized zinc.

No. 1,446,238. Brick. Gentaro Yumuri, Tokyo-Fu, Japan, patentee.

A brick composed of a mixture of crushed grains of liparite and clay.

No. 1,445,083. Safety-Tread Ceramic Tile. George N. Jepson and Milton F. Beecher, Worcester, Mass., patentees.

A safety tread tile comprising a body of vitrified ceramic material having abrasive granules embedded mainly in the tread portion thereof, said granules being integrally bounded by said material and forming therewith an anti-slipping, wear-resisting surface.

No. 1,444,519. Method of Molding Brick. Charles L. Norton, Boston, Mass., patentee.

In the designated method of molding brick-shapes of granular non-plastic material, accumulating a mold charge at a height above a mold, and simultaneously depriving said charge substantially in its entirety of both vertical and lateral support.

No. 1,446,832. Building Block Mold. Theodore Cargill, Washington, D. C., patentee.

A building block mold comprising sections of angular form, including walls arranged at angles with one another, one wall having a re-entrant portion with spaced walls, and means for slidably connecting said sections and securing them together and so arranged that the section having the re-entrant portion can be slid longitudinally of such portion for the withdrawal of said portion from the molded block.

No. 1,444,691. Carton for Shipping Brick. William C. Koch, St. Paul, Minn., patentee. Patent assigned to Twin City Brick Co., St. Paul, Minn.

A sample package, comprising a foldable carton formed with folding side and end walls, and side walls having openings at their base, each of said walls having a folding flap, said flap forming collectively when folded a closure for the carton, and a plurality of loosely assembled brick arranged to represent a section of wall within the carton, said wall including loosely assembled strips to represent the horizontal and vertical mortar joints between the bricks, and readily detachable tying means extending transversely of the bricks around the latter, and through said openings in the side walls and across the bottom of the carton, whereby to tie the bricks and carton firmly together to form a unitary package.

No. 1,446,330. Brickmaking Machine. Adam Bootrym, Scranton, Pa., patentee.

In a machine of the class described, a shaper, a carriage adapted to receive the material from said shaper, an end board on said carriage provided with curved slots, a frame having one of its arms rotatably guided in eyes on said carriage; a second arm of said frame provided with pins guided in said curved slots for acting as spacers to determine the length of the brick next to said end board, a handle connected with said second arm, hooks on said handle and said rotatable bar, cables secured with their respective ends to said handle hooks

and said bar hooks; a stop for said second arm, and wing nuts at the outer ends of the hooks on said bar for tautening said cables; a recessed, perforated bottom plate on said carriage, said cables adapted to cut the material supplied to said carriage from said shaper and to enter the recess of said bottom place, and means for supplying moisture to said perforated bottom plate.

No. 1,446,857. Kiln. Frederick Peiter, Brooklyn, N. Y., patentee.

In an apparatus of the kind described, a rotary kiln drum and a rotary drier drum relatively mounted so that the discharge end of the latter is adjacent to the receiving end of the former, a communicating means between the discharge end of said drier drum and the receiving end of said kiln drum, such arrangement permitting the travel of material successively through said drier drum and said kiln drum, and a material cooling means in communication with the discharge end of said kiln drum.

No. 1,446,896. Brick-Cleaning Machine. Nelson T. Fuller, New Bedford, Mass., patentee.

In a brick cleaning machine, a cutter, including a wheel having radial slots, the inner ends of which are undercut, blades fitted in the slots and having their inner ends shaped to engage the said undercut end walls of the slots lugs on the outer ends of the blades, a split ring engaging over the lugs to hold the blades in the slots, and clamping arms on the ring to hold the latter to the wheel.

No. 1,446,949. Manufacture of China Clay. Nils Testrup, London, England, patentee.

A method of manufacturing china clay, consisting in freeing wet clay having a large liquid content of its superfluous liquid until a layer of deposited clay of smaller average liquid content varying through the layer is obtained, removing only the densest clay from the side of the layer remote from that on which the liquid has separated and feeding said densest clay in the form of a film on to a drying surface heated by a medium of which the temperature is only moderately in excess of the evaporating temperature of the liquid still in the clay.

No. 1,447,155. Machine for Assembling Tiles. John J. Semaschko, Morrisville, Pa., patentee.

In a machine for assembling tiles of uniform pattern, an elevator for feeding the tiles thereto, a conveyor for transporting the tiles from the screen to a chute divided into independent channels, an agitator for evenly distributing the tiles over the channeled chute, gravity fall means for effecting the release of the tiles from the channeled chute in aligning rows on to tile receiving means, mechanism for reciprocating the tile receiving means laterally, whereby successive rows of aligning tiles are discharged in staggered relation, and mechanism for interrupting the discharge of said tiles when a predetermined number thereof have been assembled.

No. 1,443,966. Brick-Handling Apparatus. Henry O. Pond, Tenaflly, N. J., and Arthur W. Mellen, Jr., New York, N. Y., patentees.

In an apparatus for handling bricks and other articles piled in stacks, a receptacle constituting a carrier, having a front opening to receive and discharge the stack as a unit, releasable means for closing said front opening to confine the articles in the carrier during transportation; means associated with the bottom of the carrier to support the articles in the carrier, but permitting the carrier to be loaded by horizontal movement over the stack, and a pivoted support for the carrier whereby the carrier may be swung to permit discharge of the articles downwardly by gravity through said front opening.

MACON'S OLDEST BRICK BUILDING.

THE oldest brick building in Macon, Georgia, according to the Macon Magazine, is the residence at 519 Walnut St., built in 1826, which is still in good condition. It is such a fine example of a good brick building that it is copied by modern architects and recently an almost exact replica has been built in one of Macon's newest residence districts.

Macon is a brick city, thanks in a large degree to the super-salesmanship of W. E. Dunwody. Being a super-salesman, Mr. Dunwody believes in advertising and frequently runs telling ads in the local papers. Here's an example of one recently run in a quarter page of the Macon News:

A Train Load a Day

South's Largest Manufacturers of Burned Clay Products

Standard Brick Co.

Hollow Tile—All Kinds and Sizes

Possibly no industry has experienced the many changes in the last few years that have come to the manufacturers of clay products. The Ancients, by crude methods, with the use of clay, a little straw, moisture and the sun's rays were enabled to make the first brick. Thus brick making has come to us as one of the most ancient of arts. As culture advanced, the manufacturer of brick has kept pace with the rapid march of events. In the last five years the most radical changes have taken place, which require an immense amount of capital to operate the modern brick plant. With the introduction of modern machinery and equipment, the STANDARD BRICK COMPANY is now enabled by their unlimited capital and vast resources to claim, without fear of contradiction, to be among the largest and most scientific brick manufacturers in the world.

The men who today fashion and burn the brick that stand the test of time and meet the rigid requirements of modern construction methods, have made brick-making their life work. Only technically educated men can operate equipment of a modern brick plant and meet the stern requirements of the present-day building engineer. Science has joined hands with nature to produce the most beautiful and lasting material for all building purposes. It has been truthfully said "THE PLANTS OF THE STANDARD BRICK COMPANY ARE AMONG THE MOST SCIENTIFICALLY OPERATED PLANTS IN THE WORLD."

STANDARD BRICK CO.

Macon, Georgia.

Mr. Dunwody is an active member of the Macon Chamber of Commerce, an organization of live wires that keeps

Macon in the limelight as a commercial, industrial and political center.

Written for THE CLAY-WORKER.

ALABAMA NEWS.



BIRMINGHAM has the reputation of manufacturing the best clay products of all kind, that are manufactured in the entire country," said an expert clay man of the Birmingham district. "As an illustration, building tile manufactured in Birmingham are of a superior grade, because they contain a sufficient amount of fire clay, which is sticky and holds them together and keeps them from breaking," he said.

Birmingham manufactures a very fine buff colored brick. The clay from which these brick are made is also mixed with fire clay, giving the buff color. This fire clay is of a blue color when it comes from the clay pits, but in the burning turns to a buff color, which is very attractive when placed in a wall.

Many of these buff colored brick are going into residences in Birmingham and thousands of them are being shipped to other cities, for both residences and business blocks.

The Gadsden Clay Products Company, of Gadsden, Ala., has sold to Baxter Brothers, contractors, 1,000,000 brick, which will go into the new high school which is being erected there at a cost of \$150,000. All of the brick used in this job will be supplied from the Gadsden, Ala. brick concern.

Practically all of the clay products factories of the Birmingham (Ala.) district, including brick, building and drainage tile, sewer pipes, silo blocks and other manufactures of clay products are operating on full time and with a full force of workmen. The only hinderance the clay manufacturers of the Birmingham district are now experiencing over last year's operations is the rise in the price of coal. One clay manufacturer said: "We are now paying 60 per cent more for coal than we were paying at this time last year." When asked the cause of this, he said that about 50 per cent of it was due to the raise in the miners' wages recently, and the other 50 per cent was going to the coal mine operators as profits. He thought this should be remedied in some way.

Prices on Birmingham (Ala.) building tile are quoted as follows: 8x5x12 backup tile, delivered on building site in Birmingham, \$84 per thousand. Five per cent discount is allowed for cash. In October, 1922, backup tile of the same size were \$78 per thousand, thus showing an increase in price at the present time over October, 1922 prices, of \$6 per thousand. The demand for building tile, brick, sewer pipe and all kinds of clay products is greater at this time than during last October.

The Birmingham Clay Products Company of Birmingham, Ala., has developed and is manufacturing a royal purple brick which has been named "Tut-tex," because the texture is the nearest modern production of the effects in the clay products produced in the region of the monarch whose name is on everyone's lips these days—King Tut of Egypt. John W. Sibley, of the Birmingham Clay Products Company, said: "As a companion brick to 'Tut-tex' we are manufacturing the beautiful golden matt brick, such as was used in the Young Men's Hebrew Association building in Birmingham, under construction. In the future we will design and make 'Luxor Matts,' because, like the brick made by the children of Israel, near the ancient city in the days of Pharaoh, they are made without straw."

A. L. A.

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.



ALLIANCE is experiencing an actual boom in the way of burned clay products. Most of the brick and chinaware concerns are either making additions or planning them. Nearly all of these chinaware factories have been built in the last few years, several of them in the area along the eastern edge of the city where the tall yellow kilns rising like decanters give the region the appearance of East Liverpool. The new plant of the Crescent China Company went into operation early this year and now has about 250 persons on its payroll. The concern was brought to Alliance from Niles, Ohio, through the efforts of the Alliance Chamber of Commerce.

The Alliance Vitreous China Co., property of the George H. Bowman Company of Cleveland, is building an addition to take care of an increasing business in hotel china and bathroom accessories. This was the first of several china companies now located here.

The Alliance Pottery and Sales Company, a decorating concern, has been operating two or three months with a force of about 25 persons. This number is to be increased to 100.

The Alliance Clay Products Company, one of the two large face brick manufacturing companies here, will build a new plant which will nearly double its productive capacity. About 150 are now employed. Like some of the fireproofing plants south of Canton, this company has the unusual advantage of being able to take coal and clay out of the same hill. Unlike common brick, the product will stand a comparatively long freight haul and is now moving into Chicago and New York as well as Cleveland to serve the phenomenal residential construction.

The other brick concern is the Alliance Brick Company, the president of which is F. A. Hoiles, publisher of the Alliance Review. The brick plants are located here because of the presence of clay and coal, but it should be understood that the chinaware companies have no connection with any native natural resource except fuel. The clay comes mainly from England.

Three additional kilns have been contracted for by the Shenango China Company, Newcastle, Pa. With these in operation this company will have sixteen kilns under fire and will give employment to an additional 100 workers. Some months ago the company increased the capacity of the decorating department because of the increased demand for the hotel china line.

The interest in the Smith and Phillips China Company, East Liverpool, held for years by V. Q. Hickman of Pittsburgh, has been purchased by Paul V. Robinson of Akron, who has been elected president and secretary of the corporation. Other officers just elected include Mrs. E. W. Robinson, vice president; H. Dan Smith, treasurer and general manager. The vacancy on the board of directors caused by the retirement of Mr. Hickman, has been filled by the election of J. Clare Smith, son of the late T. J. Smith, of this firm.

Operations have been resumed at the East Ohio Sewer Pipe Works, East Liverpool, and the Banfield Clay plant at Irondale, Ohio, with several hundred employes of the concern going back to their jobs at the old scale. Officials of these industries announced that the majority of the men have resumed work. Others are expected to return to their jobs by the middle of May. The men, who have been getting 45 cents an hour, walked out three weeks ago, seeking an increase to 60 cents an hour.

The largest contract ever landed by the Whitacre-Greer Fireproofing Company, of Waynesburg, is for fireproofing ma-

terial to be used in the construction of the Union Trust Company building in Cleveland. The order calls for 1,300 carloads of material to be delivered during the year. Each day ten or twelve carloads are used, according to John J. Whitacre, president of the company, who said that more tile will be employed in erecting this building than any other in that city. At the present time the capacity of the Waynesburg plant is 30 to 35 cars of tile a day.

May 11 the Burley Clay Products Company, of Zanesville, was incorporated for \$150,000 by S. V., Z. W., Florence, John G. and Emmett E. Burley, all well known pottery owners in the Crooksville district, and also in the American Clay Products Company in this city. The plant of the new company is located near South Zanesville and is a two-kiln affair and it was the intention when construction work was started to operate a stoneware plant. The factory has now practically been completed and ready for operation.

Three new clay plants have been added to the Uhrichsville district. The plants of the Romig Clay Products Company and the Stillwater Clay Company, near Newport, already are in operation, while the Ross City Products Company's second plant at Lock 17, is in course of construction.

Operations of the Hopewell China Company at Hopewell, Va., have been suspended temporarily because of a fire which destroyed the decorating kiln sheds, decorating warehouse and a large quantity of finished china the first of the month. The loss was approximately \$100,000.

The Glacial Sand and Gravel Company of Zanesville, has been taken over and all its holdings purchased by the Continental Clay Company of Columbus. The holdings of the company include about 50 acres of sand. A new sand washing outfit has been installed, offering a production of from 15 to 20 cars a day of glacial sand. The Continental Clay Company recently purchased other properties in that district.

A BUCKEYE.

RUTGERS COLLEGE NEW MINING EXPERIMENT STATION.

THE Secretary of the Interior has designated Rutgers COLLEGE, New Brunswick, New Jersey, as the location of a new mining experiment station of the Bureau of Mines, which will specialize in problems involved in the production and utilization of the non-metallic minerals. These minerals include bauxite, cement, clay, feldspar, Fuller's earth, graphite, gypsum, lime, mica, phosphate rock, salt, sand and gravel, sand-lime, slate, stone, sulphur, mineral paints, garnet, asbestos and talc. The value of these non-metallic minerals produced annually in the United States is in the neighborhood of a billion dollars.

The choice of Rutgers College was determined largely by the fact that its location is a central one with reference to both production and consumption of non-metallic minerals. The adjacent State of Pennsylvania alone has one and seven-tenths times as great a production of non-metallic minerals as all the states south of the Potomac and Ohio rivers combined. The New England and North Atlantic States, which are readily served from New Brunswick with a minimum of travel, have a combined non-metallic output of approximately $3\frac{1}{2}$ times that of all the states south of the Potomac and Ohio rivers. Furthermore, about 75 per cent. of the industries consuming the non-metallic minerals production center in the large industrial cities and are within easy reach of Rutgers College.

Instead of troublesome competition in the business there should be friendly co-operation among those in the clay-working industry.

WASHINGTON CONFERENCE AGREES ON STANDARDIZATION OF FACE BRICK—SEVENTY-THREE KINDS TO BE REDUCED TO TWO.

ON MAY 12 A CONFERENCE was held at the United States Department of Commerce to take the preliminary steps toward a general standardization agreement covering a reduction in the number of sizes and kinds of face brick. The conference was called at the suggestion of Secretary of Commerce Hoover, and was arranged by the department's Division of Simplified Practice, presided over by William A. Durgin, the chief of the division.

Those who participated included representatives of the American Face Brick Association, Chamber of Commerce of the United States, American Institute of Architects, Department of Commerce and the Treasury Department.

After considerable discussion the conference reached a tentative agreement which will make possible the standardization of all face brick manufactured in the United States into two dimensions. This was stated to be practicable by the representatives of the face brick manufacturers who were present. The proposal, however, will be submitted to architects, builders and others concerned, and a second general conference to take decisive action on the matter will be held at the Department of Commerce on June 18.

It was reported to the conference that at present thirty-eight different sizes of rough and thirty-five sizes of smooth face brick are being manufactured and used in the United States, but that 90 per cent. of the production can be brought within the scope of the tentative agreement reducing the sizes to two. Brick manufacture can be greatly cheapened and the output rates increased, it was stated, by standardization.

TAKES OVER INTEREST IN KENTUCKY POTTERY.

F. P. Pence, of East Liverpool, Ohio, has purchased an interest in the Paducah Pottery, Paducah, Ky., and a company has been incorporated with \$50,000 capital stock. The pottery which has been closed for nearly a year, is being remodeled and a variety of clay products will be manufactured. Mr. Pence will have active management of the plant and so will make his home in Paducah. L. T. Burradell is interested with Mr. Pence. The latter has had many years experience in the clay industry and is well qualified to make a success of his new undertaking.

CONNECTICUT MAN TO CONCENTRATE INTEREST ON ONE PLANT.

J. F. Reynolds, of North Haven, Conn., is sending an announcement to his friends in the clayworking business, stating that after twenty-five years connection with the I. L. Stiles & Son Brick Co., of North Haven, he has severed his connection as general manager and director of the I. L. Stiles & Son Brick Co., the North Haven Brick Company and the Stiles & Hart Brick Co., and will in the future direct his entire attention to the Stiles & Reynolds Brick Co., of North Haven, Conn. May success attend him.

NEW FACTORY COMPLETED.

The new and enlarged factory of the Ricketson Mineral Paint Works at Milwaukee has been completed, according to Frederick C. Bogk, President of the Company. This work was imperative he says on account of the increasing demand for the Ricketson non-fading mortar colors. It is now the

largest exclusive mortar color factory in the country today and with the increased capacity and storage room Mr. Bogk promises promptness and dispatch in the handling of all future business.

BRICK PLANT FOR HONDURAS.

H. U. Beckley, of San Pedro Sula, Honduras, writes he is going into the brick business there, and so is interested in receiving The Clay-Worker.

DEMAND GOOD IN LONG ISLAND.

Jotham Post, of East Williston, L. I., N. Y., reports he is more rushed this season than he was last. He burns a kiln of 400,000 every other week, and they are trucked away in less than five days, so, as "Joe" says, "In spite of all our hard work we are out of brick most of the time."

ROUGH TEXTURE BRICK GOING GOOD.

John W. Sibley, the general sales manager of the Birmingham Clay Products Co., Birmingham, Ala., reports splendid trade in April, shipping a total of 1,700,000 brick at good prices. He writes, "Our dry press rough texture brick have taken like wild fire. 'Rytt' says this is due to salesmanship, but modesty forbids me to boast."

FIRE BRICK MANUFACTURERS TO MEET AT FRENCH LICK.

THE ANNUAL MEETING of the Refractories Manufacturers Association is announced for French Lick Springs Hotel, French Lick, Ind., Thursday and Friday, June 14 and 15, 1923. A large attendance is anticipated and a good program has been arranged, copy of which can be had from Secretary F. A. Donahoe, Oliver Building, Pittsburgh, Pa.

A NEWCOMER FOR THE BRICK PLANT.

The Siner Hand Wagon designed to handle from three to four times as many brick as can be handled in a wheelbarrow is illustrated in a folder recently received from the Lancaster Iron Works, Lancaster, Pa. The wagon is particularly well adapted to handling the different fire brick shapes, including arch and circle brick, and cupola blocks, and is an ideal truck to be used on a hot floor dryer. For further particulars and information on any desired device for speeding up brickyard operation, address the above firm.

BOOK OF SMILES.

The Book of Smiles has a new department under the caption "Nutty Nonsense." The following is one of the gems:

Agent: "When are you going to pay for that sewing machine. I sold you?"

Mrs. Sweetie: "Pay for it? Why you said that in a short time it would pay for itself!"

On another page we find this "NOBLE TRUTH"

It's easy enough to be pleasant
When you put your foot on the rail,
But the man worth while
Is the man who will smile
When his wife reads his personal mail.

Incidentally the Standard Dry Kiln is mentioned, and the careful reader will discover that the Standard Dry Kiln Co., 1581 McCarty St., Indianapolis, Ind., furnish the brick and tile trades transfer cars, drier cars, and all other necessary devices for dryer equipment.

REVIEW OF CONVENTION OF ILLINOIS CLAY MANUFACTURERS ASSOCIATION.

THE FORTY-FIFTH annual convention of the Illinois Clay Manufacturers' Association was held Tuesday, May 8th, Hotel La Salle, Chicago, Illinois.

Tuesday morning was given over to separate meetings of the Illinois Drain Tile Manufacturers' Association, the Indiana-Illinois Division of the American Face Brick Association and the Illinois Paving Brick Association.

The various associations met together at noon for luncheon under the auspices of the Illinois Clay Manufacturers' Association and at that time an interesting program of papers was rendered and the general business of the annual meeting transacted.

Tuesday evening the Chicago section of the American Ceramic Society acted as host to the delegates, giving a dinner and entertainment at the Hamilton Club. Included in the social function was the exhibition of the Chicago Tribune film, a most interesting moving picture showing the forests, the preparation of wood pulp, the manufacture of paper and the printing process in the immense Tribune plant.

Immediately at the conclusion of the noon luncheon, at which fifty were present, Professor Parmalee, secretary of the Illinois Clay Manufacturers' Association, read the financial report, and this was followed by committee reports. James A. Reeves of the Streator Drain Tile Co., Streator, Illinois, acted as chairman in the absence of President Eben Rogers.

The nominating committee recommended the following officers for the ensuing year: J. A. Reeves, Streator, president; Dr. Brosnan, Albion, vice-president, and C. W. Parmalee, Urbana, secretary-treasurer. They were elected by a unanimous vote.

President-elect Reeves made a short speech of acceptance and then introduced M. M. Leighton, Director of the Illinois State Geological Survey, who detailed the scope and work of his organization as it related to the ceramic industry.

O. R. Zeasman of the Agricultural Experiment Station, Madison, Wisconsin, made a short talk on drainage and the work being carried on at the Experimental Station, Wisconsin University.

Douglas Stevens, chairman of the Committee on Amalgamation, made a report of the findings of the committee which was appointed at the 1922 meeting to consider the recommendation of Ross C. Purdy that the Illinois clay interests be consolidated with the Chicago section of the American Ceramic Society.

Mr. Stevens stated that the committee felt that the recommended consolidation was not advisable, since the reputation gained by the old organization was such that it still had the needed influence in state matters. It was recommended that the by-laws be so changed as to make it possible for each of the various clay products associations of Illinois to select one representative from its membership who would act as a director of the association. This was approved by vote of those present.

Professor Parmalee reviewed the year's work in the Illinois University Ceramic Department.

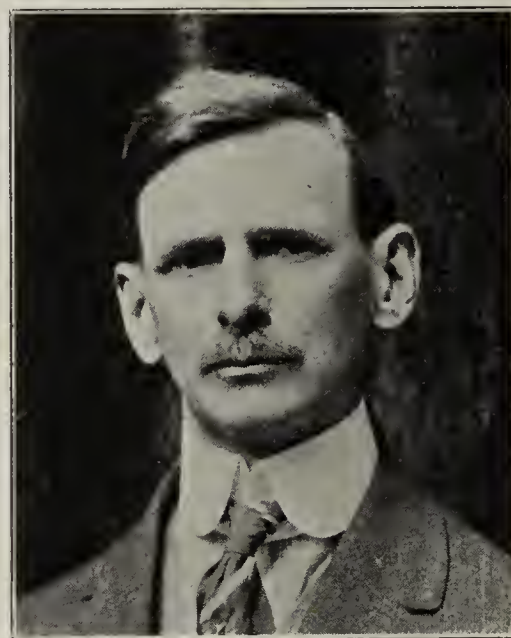
Albert H. Sheffield, secretary of the American Terra Cotta Company, Chicago, Illinois, read a most interesting paper on "The Relation of Sales to Manufacturing." He declared that the correct analysis of any business would show that it was time that was being sold, and not a certain product, that time entered into all propositions and every department should be so regulated as to accurately take care of this element

of time. The sales end and production end should work so in harmony that both would balance at the end of each work period. The salesman is selling time in reality and time is not elastic, so that the business should be governed entirely on what time can be successfully employed in the factory in co-operation with the various departments.

"What the Buyer Must Be Shown" was the title of an interesting address by James A. King, editor of the National Reclamation Magazine, St. Louis, Missouri. He dwelt more on the selling of hollow tile than any other particular clay product and gave the principles governing proper boosting as gleaned from his many years' experience in this line.

Ralph Hursh of the University of Illinois Ceramic department made a very instructive talk on "The Production of Green Colors on Face Brick." This detailed the various methods used in getting green shades, the materials employed and the kiln conditions necessary for certain definite results.

"Efficiency in Clay Haulage" was a chart talk by Thomas N. McVay of the University of Illinois. This detailed pulling power required for resistance due to gravity, bearings, track, curves, etc., under different conditions. He emphasized the



President J. A. Reeves, Streator, Ill.

importance of keeping track and equipment in best possible condition in order to reduce to the minimum the power required.

The out-of-state visitors were called upon and responded with short speeches, after which the meeting was adjourned.

The morning sessions of the Paving Brick and Face Brick Associations were held in separate rooms at the Hotel La Salle, and were for the most part given over to general business routine.

The Illinois Drain Tile Manufacturers' Association met in Parlor B. J. A. Reeves acted as chairman in the absence of D. C. Haeger, the president. Mr. King and Professor Zeasman were the principal speakers.

Mr. King spoke on the subject, "Where is the End of Drainage." He reviewed the history of drainage, stated that in the early days of same it was undertaken solely with the idea of removing surface water; later was seen the need of added drainage for removing the subsoil water in wet lands, and today drainage systems are installed not only for removing surface water and subsoil water from wet lands, but the sub-drainage of high rolling hill lands and apparently dry lands to ventilate the soils and preserve at the desired

level the needed soil water for required plant growth. He detailed the experimental work in Minnesota on height of water level needed to give best results for field and truck crops and declared that this will result in a more accurate knowledge of how drainage can control soil water and give proper water table for corn, sugar beets, etc. Mr. King stated that we are just at the entrance way in the drain tile business, that at Mason City, Iowa, the six tile plants there would have to work at full capacity for twelve months to furnish 15,000 car loads of drain tile, the required amount for drainage of the county there alone.

He detailed various ways of financing drainage projects, cited the law in effect in Minnesota, that it was ideal, for it permits the issue of improvement bonds spread over a period of from twenty to thirty years and relieves the farmers of any immediate heavy burden of taxes in drainage work, although projects may range from 20 to 20,000 acres. He declared that there is need of enabling acts, which should be passed by the various state legislatures.

It has been decided by court that "any material increase in the productivity of any material acreage of land constitutes a public benefit." This argument should be used in



Secretary Cullen W. Parmalee, Urbana, Ill.

those states and places where there are difference of opinion in what constitutes a public benefit.

He declared that sixty years ago it required two hours of labor to produce one bushel of wheat, but today in reclaimed soils this can be accomplished with ten minutes of labor, increasing greatly the productivity per acre and also per man. By reclamation the same production can be made with fewer hands, thus solving to some extent the labor shortage.

He urged that the drain tile manufacturers organize drainage districts and broadcast the good ideas set forth in the Minnesota drainage law to get proper action in legislative work and secure proper funding methods for drainage work.

Professor Zeasman detailed the work at the Agricultural departments of the University of Wisconsin and discussed the good points in the Wisconsin drainage laws.

J. L. Tremper, Streator, Illinois, made a report of the Traffic Committee and urged all associations to work together to get uniform satisfactory freight rates.

Those in attendance at the Illinois Clay Product Manufacturers' Association meeting were:

C. W. Parmalee, University of Illinois, Champaign, Ill.; R. K. Hursh, University of Illinois, Champaign, Ill.; John

Andres, Evansville, Ind.; John J. Moroney, Chicago Brick Machinery Co., Chicago, Ill.; E. D. Mattes, Decatur, Ill.; B. H. Richards, Jr., Richards Brick Co., Edwardsville, Ill.; Geo. W. Repp, A. F. B. Association, Chicago, Ill.; W. A. Larerty, Brazil Clay Co., Brazil, Ind.; Harry L. Baldwin, A. F. B. Association, Chicago, Ill.; C. C. Barr, Barr Clay Co., Streator, Ill.; W. P. Whitney, Springfield, Ill.; E. F. Plumb, Streator, Ill.; R. H. Green, Streator, Ill.; C. E. Carter, Peoria, Ill.; E. L. Middleton, Barr Clay Co., Chicago, Ill.; W. H. Hill, Murphysboro Paving Brick Co., Murphysboro, Ill.; F. G. Matteson, Purington Paving Brick Co., Galesburg, Ill.; W. D. Gates, American Terra Cotta Co., Chicago, Ill.; Major Gates, Clay Service Corporation, Chicago, Ill.; J. E. Randall, The Clay-Worker, Indianapolis, Ind.; A. H. Wehinger, Ottawa Tile Co., Ottawa, Ohio; Clyde Martin, The L. H. Martin Co., Dwight, Ill.; Herbert V. Kaepfel, Chicago, Ill.; Harold E. Culver, Illinois State Geological Survey, Urbana, Ill.; Peter Munson, Capron, Ill.; W. C. Hoover, Springfield, Ill.; J. F. Glasgow, Portland, Ind.; J. M. Mamer, Campus, Ill.; Harry Landrum, Col. Clay Manufacturing Co., Black Lick, Ohio; D. C. Haeger, Aurora, Ill.; Douglas F. Stevens, Acme Brick Co., Danville, Ill.; J. Leo Child, Hancock Brick & Tile Co., Findlay, Ohio; O. R. Zeasman, Madison, Wis.; J. L. Tremper, Streator Drain Tile Co., Streator, Ill.; G. B. Luckett, Crawfordsville Shale Brick Co., Chicago, Ill.; A. H. Sheffield, American Terra Cotta & Ceramic Co., Chicago, Ill.; Jas. A. King, National Rec. Magazine, St. Louis, Mo.; T. M. McVey, University of Illinois, Urbana, Ill.; E. N. Bunting, University of Illinois, Urbana, Ill.; M. M. Leighton, Illinois State Geological Survey, Urbana, Ill.; Jas. A. Reeves, Streator Drain Tile Co., Streator, Ill.

E. V. GRUBER AT MENDOTA, ILLINOIS.

The Mendota Brick & Tile Co., Mendota, Illinois, has been purchased by E. V. Gruber, recently in business in Nebraska. In a recent letter, he states that he will make Mendota his future home. The plant is being operated to full capacity, business is good and there are enough orders ahead for a full summer's run. Labor is high but the demand is such that good prices are obtained.

A TYPOGRAPHICAL ERROR.

In the account of the Connecticut Better Home Exposition in the April issue of *The Clay-Worker*, the typo made us say "10,000 people passed through the doors and viewed the exhibits." We meant to say 100,000. The daily attendance ranged from ten to eighteen thousand and there were, all told, more than a hundred thousand visitors during the show, each and all of whom carried away lasting impressions of the importance of better home building.

A NOVEL BOOKLET ON BELT-JOINING.

"Away from Methuselah" is the intriguing title of a unique booklet recently published by the Crescent Belt Fastener Co., 381 Fourth Ave., New York City. It takes the reader back to the first belt joint made by the cave-man in prehistoric times and sketches in semi-humorous style, the development of belt-joining from that era right up to the present. The booklet is enlivened with amusing cartoons, and makes very interesting reading, at the same time giving the reader a very clear idea of the history of belt-joining. The last few pages of the booklet are devoted to a concise description of Crescent Belt Fasteners with the whys and wherefores of the service they render. A copy will be gladly sent by the Crescent Belt Fastener Co. to anyone interested in increasing belting efficiency.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

AVERAGE SHRINKAGE AND AVERAGE HEAT.

QUESTION: What is meant by an average shrinkage and an average heat?

Answer: By a medium shrinkage is meant that the clay should not shrink more than from one to one and a half inches in twelve. An average heat is from 1900 to 2200 deg. Fahrenheit.

SPEED FOR FAN.

QUESTION: We have a fan 6 inches by 2 feet wide and would like to know at what speed this fan will have to run to take care of a Hoffman Type 20 Chambers continuous kiln. Would also like to know what horse power motor it will require to run this fan?

Answer: Relative to the size and speed of a fan for a Hoffman kiln, the fan,—68x24-inch wheel, is large enough for the kiln, and 100 R. P. M. is amply fast enough, in fact slower will answer. The power required will not exceed 10 H. P.

THE MANUFACTURE OF VENEER BRICK.

QUESTION: Would like to know something about the manufacture of veneer brick.

Answer: This branch of the brick industry is in its infancy in this country. A veneer is simply a thin coating of a clay mixture with the addition of chemicals, mixed to the consistency of cream, which is fed to the clay column as it emerges from the die of the brick machine, from a can or other container bolted above the nozzle.

Here is a statement from one who has experimented along these lines very extensively and is no doubt the best posted man on this subject in this country:

"I have made chocolate veneers from different clays. I make mixtures of the clay, potters whiting and recovered manganese. I aim to get the most fusible mixture of clay and potters whiting, which is done by making a number of different mixtures from 1% whiting to 30%. These mixtures are then made up into cones and burned in the kiln. The one which softens and bends over first is noted and indicates the most fusible mixture. When this mixture is made up and applied as a veneer, it will fuse at a much lower temperature than the vitrifying point of the clay. Usually the color those developed is an olive green. Now by substituting from 3 to 5% of recovered manganese for 3% to 5% of whiting, the color changes to brown. With 5% manganese and 5% red oxide of iron, a color which is almost black is obtained. I find

that the cost per thousand brick for making these veneers is less than 15 cents.

"I have successfully made white enamel brick by applying the enamel to a good No. 2 fireclay by my veneering process. The cost of the white enamel per thousand brick is a little less than \$1.00. I have also made hard vitrious white porcelain veneers at a cost of about 55c per thousand. The possibilities of the veneering process are unlimited as an effect can be obtained from a pure white enamel to black including speckles and mottles. A most beautiful effect can be obtained by using a green veneer to which has been added granular manganese. The manganese fuses, leaving black spots in a green background. I have applied for a patent on this machine."

SUBSTITUTE FOR ENAMEL BRICK.

QUESTION: What will be in some measure a substitute for enamel brick?

Answer: Salt glazed brick; they can be sold for about one-third the price of the cheapest enamel brick, but they can not be made in so many colors, in fact the color is limited to light brown, chestnut or mahogany color or dark glazed. As much as sanitation is concerned salt-glazed brick are equal and often superior to any enamel brick, because the salt-glaze is so united with the body of the brick that it will never peel off, or craze, such as many enamel brick do in the course of time after being exposed to the elements and the action of the atmosphere.

CLAY SUITABLE FOR ENAMEL BRICK.

QUESTION: How are enameled brick made and what kind of clay is suitable?

Answer: No 2 fireclay is most suitable for enamel brick and the brick are dipped in mixtures of different clays, chemicals and fluxes, the composition of which produces various colors. This branch of the brickmaking industry is in a class by itself and it would be folly for a small brickmaker to engage in the enamel brick business. It takes a big capital to successfully run such a plant and the supply is furnished by a few plants that have for many years developed the business at great cost, and by employing the most expert chemists of this and foreign countries. Fortunes have been lost by some who tried the enamel brick business.

WANTS FLOWER POT MACHINE.

The Daugherty Art Pottery of Denton, Texas, is building a new shop on D. C. D. Highway, near Denton, Texas, and will make a specialty of flower pots and art ware. They state they are in the market for flower pot machinery, preferring a No. 2 Baird machine.

THE BOYD BRICK PRESS.

Under the above caption, Chisholm, Boyd & White Co., Chicago, have issued an attractive leaflet telling graphically of the merits of the Boyd Press, which according to their slogan is "Built Up to a Standard—Not Down to a Price" and which is especially adapted to heavy service which is required in the manufacture of high grade face brick, common building brick, etc. It is illustrated with a beautiful cut of the Boyd Press and another of the Improved Acme Clay Mixer which is now an important auxiliary in the manufacture of high grade clay products by the dry pressed process. Copy may be had for the asking from the above firm at their main office and works, 57th and Wallace Sts., Chicago, Ill.

A SCHOOL FOR BRICKLAYERS.

A Good Opportunity of Demonstrating the Efficiency of the Mann Patent Trowel, With Which Intelligent Workmen Can Lay From Two to Four Times as Many Brick in a Given Time as Skilled Bricklayers Can With Ancient Trowel.

HERE'S an interesting story in the "West Side Men," a Brooklyn news publication, of the establishment by the West Side Y. M. C. A. in Manhattan, of a school for bricklayers, started early in the year. A number of men, some of them middle age, but mostly young men, have made good and acquired sufficient skill in the ancient art of bricklaying to work efficiently at that trade.

The interesting story concludes as follows:

Clerks, bookkeepers, a few teachers, some butlers and waiters are understood to have tried this course. They had been getting from \$20 to \$30 a week. Bricklayers get nominally under a new agreement \$12 a day. For months past they have actually been earning \$14 or \$16 a day, with a \$10 agreement. Also their expenses of living, especially their expense of dressing, are much lower than the clerks'. It was shown that in some cases the student of bricklaying was devoutly thankful for the instruction he had received.

As for getting into the unions, a building contractor explains that this is not so difficult as it might seem. "The Y. M. C. A. pupil just takes his tools and travels. In a village of say a hundred families, where the union is unknown, he sees a house beginning to go up. He asks for a job and gets it. He works a week, two weeks, and moves on to a little larger place, where he repeats the operation. In a couple of months he drifts to a small city, where there is a union. He hunts up the union officials. He doesn't say he learned his trade with the Y. M. C. A. in Manhattan. That would queer him at once. He says: 'I've worked at such and such places. I haven't a card. I want to join.' He puts up his money and gets his card. After a while he asks for a traveling card and gets it. He presents it in New York and the rest is easy."

We haven't the slightest doubt that a large number of men who are wearing boiled shirts and stiff collars and polished shoes, and sticking at desks for long hours, would be happier working with their hands at bricklaying or something else. Any move that turns them in this direction is wholesome. Producers of wealth help the country more than consumers of wealth. We are inclined to congratulate the West Side Y. M. C. A. on its intelligent enterprise.

SCHOOLS FOR PLASTERERS AND BRICKLAYERS.

Editor The Clay-Worker:

It is believed that you and your readers will be interested in learning of the actual establishment of classes in Plastering as explained in the enclosed announcement of the Philadelphia Building Congress.

You will notice reference also to a start which has been made toward classes for apprentices in bricklaying. You will be kept advised by the incoming administration of further progress in that and other directions.

D. KNICKERBOCKER BOYD.

Philadelphia, April 28, 1923.

KEEPING EFFICIENCY AT TOP-NOTCH.

Under the above caption the Brown Instrument Company, of Philadelphia, in a well illustrated leaflet, tells of the use of the Brown Pyrometers on the Harrop kiln in operation at

the plant of the Abingdon Sanitary Manufacturing Company where the record shows 100 gallons of oil is used per ton of glost and bisque ware, which is considered a decided saving in fuel cost. A copy of the leaflet will be mailed to any reader of The Clay-Worker on application to the Brown Instrument Company, Wayne Junction, Philadelphia, Pa.

A BUCKEYE BRICKMAKER KIDNAPPED.

Evidently one don't have to go to far away China to enjoy the unction and thrill of being kidnapped. Frank A. Hoiles, well known brick manufacturer of Alliance, Ohio, recently played the leading part in an intended kidnapping episode.

Mr. Hoiles is also a newspaper publisher, and a witless schemer, John B. Cox, conceived the idea that he could hold up Mr. Hoiles for a goodly sum of filthy lucre. He made the attempt but was arrested, tried and convicted in the Common Pleas Court by Judge Charles Kirchbaum, and sentenced to serve from seven to thirty years in the penitentiary.

ADDITIONAL ROAD FUNDS FOR NEBRASKA NATIONAL FOREST.

Expenditures totaling \$3,603 of national forest highway funds to be used in the reconstruction of the Halsey Plantation road within the Nebraska National Forest have just been approved by Secretary of Agriculture Wallace. This money was made available for roads serving national forests and for roads within or adjacent to the forests which are of primary importance to States, counties and communities. The Halsey Plantation road is considered the most important road in the Nebraska National Forest. The expenditure of the \$3,603 just approved will apply on the repair work on that section of the road extending from Halsey to Halsey Nursery.

FUEL OIL FOR BRICK TRUCKS.

WHILE ON A LITTLE trip the other day I happened into a laboratory where some scientists were operating an automobile engine by means of crude oil. The engine actually "ran" and it ran nicely. It gave no trouble whatever. One of the scientists told me that he believed the crude oil method was the "coming method." He said that there doubtless were a number of troubles that would have to be ironed out before crude oil burning would be practical, but he is of the firm opinion that "the day" is not far distant.

The writer is also of the belief that crude oil will be used more and more in the automotive fields. The heat value of crude oil is practically the same as that of gasoline and kerosene. Whether it will be necessary to first vaporize the oil or to feed it into the engine as is done in the Diesel is a detail that will be well worked out in the near future. Automobiles, aeroplanes, motor boats—everything that uses the small internal combustion engine, will be a user of crude oil and there will be no regrets. Crude oil is striding forward with remarkable rapidity.

—N. G. NEAR.

A CORRECTION.

Rockford, Ia., May 1, 1923.

Ed. Clay-Worker:

On page 494 of the April, 1923 issue of your magazine, you mention the fact that Mr. A. W. Wolf, S. J. Galvin, Ben Wallace and Grover Galvin have purchased the plants of the Sheffield Brick & Tile Co., and the Sheffield Tile Co. You state further that the new concern will be known as the Hampton Brick & Tile Co., which is erroneous. The Sheffield Brick & Tile Co. and the Sheffield Tile Co. have no connection whatever with the Hampton Brick & Tile Co., and the firm names will not be changed.

Yours truly,

G. H. GALVIN.

OBITUARY.

OSCAR A. WHITE ANSWERS THE FINAL SUMMONS.

Oscar A. White was born at Salamonia, Jay county, Indiana, November 21, 1860, and died at Plymouth, Ohio, April 22, 1923. He graduated from Lebanon (Ohio) College in 1879, and was principal of Ridgeville (Ind.) high school for several years.

In 1879 he married Anna Anders, who, with one daughter, survives him.

He studied law, and was admitted to the Indiana Bar in 1893.

Newspaper work always appealed to him and at different times he was the owner or editor of publications at Ridgeville, Ind., Mt. Gilead, Ohio, Greenfield, Ohio, and Plymouth, Ohio.

From 1908 to 1912 he was the Chicago manager of the American Press Association.

In 1920 he became advertising manager for The Fate-Root-Heath Company, Plymouth, Ohio, which position he held until the time of his death.

In addition to his literary attainments, Mr. White was renowned as an orator of exceptional ability.

He was a member of the Methodist Church, and active in all community affairs. He was beloved by all who knew him for his unimpeachable character, wise counsel and staunch friendship.

Death of Ellis D. Gates.

Ellis D. Gates, son of William D. Gates, of The American Terra Cotta and Ceramic Co., Chicago, died April 25th, 1923,



The Late Ellis D. Gates.

after a prolonged illness. Ellis was for years associated with his father, taking an active part in the work at the factory in terra cotta. He was well known in the ceramic field and his death is mourned by a wide circle of personal friends.

Passing of John J. Herold.

John J. Herold, late superintendent of the Ohio Pottery Company, died at his home in Zanesville on Wednesday, April 18. He had been in poor health for a number of years, and had not been active in business for several months.

Herold was born in 1871 in Carlsbad, Austria. He received his primary education locally and attended various art schools. He went through the usual period of apprenticeship

and became a decorator on china and glass. As he was not in sympathy with the military domination of that time, he came to this country about twenty-eight years ago.

He worked in various glass factories in the East and came to Zanesville, where he worked in the local art potteries, later becoming superintendent of the Roseville Pottery, a position which he held until 1908, when he went to Golden, Colorado, on account of his health.

He built a small pottery, experimented with local clays and raw materials and produced chemical porcelain ware, a product which is in considerable use in this country, but which before 1914 came from Germany, then the principal source of supply.

The Herold China Company was organized, and this company, now operating as the Coors Porcelain Company, practically enjoys the monopoly of the chemical porcelain industry in this country at the present time.

He left the Golden concern which he founded and organized and came to Cambridge, Ohio, where he produced chemical porcelain wares for the Guernsey Earthenware Company, and later was one of the founders and the superintendent of the Ohio Pottery Company, where chemical porcelain, cooking wares, and later, porcelain dinner wares were produced.

Herold's work in Colorado was remarkable for the fact that he explored the mountains of the district for clays and raw materials, afterwards using these in his products. His first equipment was very primitive, and operated with little or no assistance except that of his brother-in-law, who was not a potter.

Besides his work on high temperature porcelain, Herold developed and produced a number of bodies and glazes of considerable industrial value. He was a sincere and earnest technical student and followed closely the German technical literature of the day. His main contribution to the art ware industry is possibly his development of the copper red glaze, a glaze better known to connoisseurs as the Chinese ox-blood or Rouge Flambe. This glaze, as its name implies, is a brilliant blood-red and can only be obtained by the reduction of copper, a process in the present state of ceramic practice involving a consummate knowledge of kiln operation and manipulation.

Herold was without doubt one of the greatest practical potters of the day. The fact that his activities were mainly concerned with industrial activities of ordinary size does not diminish the importance of his accomplishments in the minds of those who have closely followed his work.

For the purely personal side, he was both modest and unassuming so far as his accomplishments were concerned, but he possessed a commanding and forceful personality, characteristics which, coupled with his knowledge and experience, enabled him to direct the production of widely varying types of ceramic wares under most unfavorable conditions, and more often than not with the help of comparatively unskilled labor.

He was a fine, fearless and upright character and was loved by all who knew him. His passing is a great loss to the industry.

SOMETHING NEW IN BRICK PRESSES.

A portable motor driven Fire Brick Press is illustrated in an attractive manner in a leaflet recently received from the Philadelphia Brick Machine Works, 1819 North Fifth St., Philadelphia, Pa. This is something new in brick presses and embodies some admirable features, that make it especially desirable in the manufacture of fire brick or similar products. It is a decided labor saver and if you are repressing ware of any sort write for a copy of the leaflet, mentioning The Clay-Worker.

ELEVENTH ANNUAL MEETING CHAMBER OF COMMERCE.

THE Eleventh Annual Meeting of the Chamber of Commerce of the United States was held in New York on May 8, 9 and 10, 1923, attended by the largest number of delegates ever present at an annual meeting of the Chamber. More than 3,000 business men were registered, as well as a large number of women who accompanied them.

Two general subjects were taken up at the meeting. One appeared on the program as "Transportation in All Its Phases in the United States" and the other, "Europe and Europe's Affairs." These two topics were discussed alternately at sessions extending over three days and were given the most prominent place in resolutions adopted by the annual meeting.

Full discussion of the two subjects was had at general sessions of the meeting by business leaders and by representatives of the government, and also in group meetings so constituted as to represent the major divisions of American business. Each of these groups took up, too, other subjects of especial moment to business interests which came within the group.

Conditions Abroad.

Julius H. Barnes, who was re-elected president of the Chamber, opened the meeting on the first day with an address in which he reviewed the European situation and outlined the work of the Transportation Conference which the Chamber has been conducting in the interest of a better national transportation system. Mr. Barnes gave to his hearers a picture of conditions in Europe as gained in a tour from which he had just returned and took occasion to point out, in connection with that part of his address dealing with transportation, how European countries are giving attention to the question of turning transportation lines over to private operation.

Delegates to the meeting had the pleasure of hearing two eminent foreign business men speak on international relations. M. Robert Masson, director general of the Credit Lyonnaise, Paris, was one, and the Honorable Raita Fujiyama, president of the National Federation of Chambers of Commerce of Japan, was the other. Each of these men had for the American business man an interesting message.

Another who was heard with great interest on Europe was Willis H. Booth, vice-president of the Guaranty Trust Company, who recently was elected president of the International Chamber of Commerce. Mr. Booth gave a resume of the work of the Second General Meeting of the International Chamber, which was held at Rome in the latter part of March, and spoke on the relationship between economic conditions abroad and business affairs in the United States.

Secretary of Commerce Herbert Hoover was one of the principal speakers. He dealt largely in his address with present economic conditions in the United States and told of the work of the Department of Commerce in assisting business both in foreign and domestic trade.

Transportation Problems.

Transportation was handled at the meeting in all of its phases. Two general sessions were given over entirely to the subject. One of these had to do with the development of a national system of rail, water and highway transport. The speakers at this session were the Honorable C. A. Newton, member of the House of Representatives from Missouri, whose subject was, "The Coordination of Our Systems of Transpor-

tation;" Roy D. Chapin, chairman of the board of the Hudson Motor Car Company, "Co-operation Between Motor and Railroad," and Charles H. Markham, president of the Illinois Central Railroad, "Co-ordination of Railroads, Waterways and Highways."

Domestic Distribution.

Transportation and its relation to merchandising came before the Domestic Distribution Group, of which Theodore F. Whitmarsh, of New York, president of Francis H. Leggett and Company, was chairman. Discussion here was led by W. Lee Cotter, of the Cotter Warehouse, Mansfield, Ohio, whose subject was "Pool Car Shipments as an Aid to Distribution;" and W. J. L. Banham, of New York, traffic manager of the Otis Elevator Company, "Store Door Deliveries of Freight."

Natural Resources.

Problems connected with the mining and distribution of coal were taken up in the Natural Resources Production Group under the chairmanship of J. H. Ross, of Tampa, Fla., president of the Exchange Supply Company. At this meeting coal distribution problems were discussed by J. G. Bradley, of Dundon, W. Va., president of the Elk River Coal and Lumber Company, who spoke on "Labor and Its Effect on the Cost of Industrial Coal," and George H. Cushing, of Washington, on "Economic vs. Legislative Solution of the Coal Problem."

Taxation.

A special group meeting was held for the discussion of taxation questions and from this meeting there came resolutions dealing with the subject.

Entertainment.

The entertainment program for the annual meeting was undertaken by the New York Merchants Association, whose president, Lewis E. Pierson, welcomed the delegates on the opening day. The entertainment included theatrical performances, a steam trip to West Point, and special arrangements for the wives of delegates.

Officers and Directors.

An election of officers of the Chamber for the ensuing year was held by the Board of Directors after the annual meeting, and resulted as follows:

President—Julius H. Barnes, President, Barnes-Ames Company, New York.

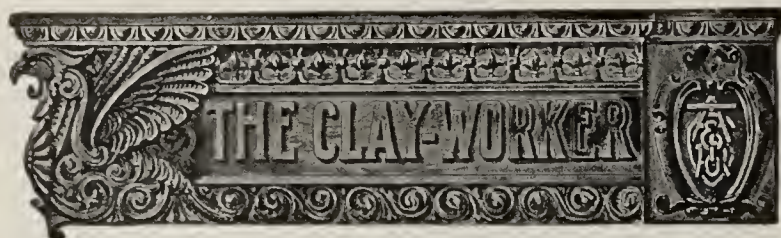
Vice-Presidents—A. C. Bedford, Chairman of the Board, Standard Oil Company of New Jersey, New York; Harry A. Black, President, Black Hardware Company, Galveston, Tex.; Henry M. Robinson, President, First National Bank, Los Angeles; Thomas E. Wilson, President, Wilson and Company, Chicago.

Treasurer—John Joy Edson, Chairman of Board, Washington Loan and Trust Company, Washington.

Resident Vice-President—Elliot H. Goodwin, Washington.

Secretary—D. A. Skinner, Washington.

A series of resolutions were introduced and discussed covering many questions of importance to the members of the organization, such as International Economic Conditions, a Permanent Court of International Justice, Immigration, Transportation, Aviation, Federal Taxation, Fire Prevention, etc., etc., all of which will be reported in full subsequently in the official proceedings, issued by the Chamber.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. May, 1923. No. 6

CURRENT COMMENT.

The outlook is flowery.

* * *

The building boom is holding up well so far.

* * *

The cost of home building is a bit high, but the home builders are getting high wages, so that helps balance it up.

* * *

It is estimated that production in basic industries is now 8 per cent. above the 1920 peak and 67 per cent. above the low point of 1921.

* * *

Yes, it costs more to lay a brick wall than it does to paint a wooden wall, but the brick wall stays put enough longer to justify it.

* * *

The spring building activity didn't really have to get under way because it kept under way throughout the winter and had an early start in the spring.

* * *

Old King Coal has lost some of his arrogance and now shows a disposition to be a regular fellow and to come around and get better acquainted on easier terms.

* * *

There are two problems connected with the labor shortage. One is to get help, and the other is to get the help you do get to earn the wages it gets.

* * *

The clayworking industry perhaps suffers more than many others in the matter of car supply for the simple reason that many of the new coal cars which might be diverted to the

hauling of clay products are of hopper type and unsuited for this service.

* * *

Here's hoping that though all the rest of us may get a vacation Industrial Activity will stay on the job.

* * *

Special weeks and those intensive drives persist with us, but they are not nearly so effective as they use to be.

* * *

The home builder continues as a big factor in the building world and it looks like he will hold the center of the stage all through the year.

* * *

Those who had a good stock of brick and hollow building tile on hand were in luck this year because there was a very active early demand.

* * *

There has been a record volume of tonnage moving on the railroads and some car shortage as a result, but the railroads are adding new equipment and striving earnestly to meet the situation.

* * *

This is a year in which the brick fraternity should get full service out of its equipment and keep all the kilns working to produce, and the sales force selling as fast as stock is produced.

* * *

If there was not a full measure of drain tile sales this spring the trade should be able to make up for it in the summer and fall because there is a better condition of prosperity in the agricultural districts.

* * *

There are still too many people cutting the first cost by using frame construction who need to be "sold" on the upkeep economy of brick walls. It isn't the first cost, but the "upkeep" that counts in the long run.

* * *

While wages are higher coal costs are a little lower, and though this will not offset the wage increase it is up to the clayworking industry to hold prices down to the lowest practical basis if we are to have continuity of busy times.

OUR FREIGHT CAR CAPACITY.

A recent compilation of data on freight cars in connection with the talk about grouping or pooling the cars, the figures show that the class one roads of the United States had at the end of 1921, 2,315,692 freight cars. About half of these are box cars, the next biggest number being in coal cars, after which come flat cars, stock cars, refrigerators and others. The average load capacity of cars is practically forty tons and has been gradually mounting year after year, that is new cars brought into service are generally of heavier capacity. These figures do not include new cars purchased during 1922 or others contracted for which are being delivered during the present year. There are quite a number of these as most of the important railroads have been buying new equipment and on the whole a thorough tabulation of the rolling stock in commission today would plainly make a bigger showing than these figures indicate.

THINGS TO KNOW.

Among the things that students of business are making clear is that in addition to knowledge of the details of the business in which you are engaged it is important to have knowledge of both the probable field of uses for your products and of the trend of business conditions generally through-

out the country. That is why it is argued that graphic charting of business cycles and the statistical data that goes with these is one of the essential studies for the successful management of business. Of course the first things a man should know pertains to the details of his own business. If it is manufacturing they center primarily around the technical and practical details of carrying on the work of production. Following this must come knowledge and enterprise in the sales field, but the things you should know about do not stop here. The realization today is that no matter how well equipped a man is with the knowledge of details of his business and the field of distribution, he should also seek to keep himself informed on business conditions generally because these, too, have a bearing on his future prospects.

INDIVIDUAL ADVERTISING.

No matter how much is done in the way of wide spread group advertising by manufacturers of clay products, or how well it is done, there is always room for progress along the line of more interest, greater diversity and better advertising.

In advertising, as in other things, knowledge is gained and improvement is made through the exchanging of ideas and through knowing what the other fellow is doing and comparing notes. One good way to promote interest and habits of this kind is through bringing copies of advertising matter to gatherings of the clans and putting them on display. There has been a fair amount of this in the clay-working industry, too, both in the brick divisions and the hollow tile division, and we should have more of it in the future because it furnishes new ideas for all and helps all around.

Value and effectiveness is given to advertising through doing it right and through introducing the novelty of change and of attractiveness, and it is by making group displays and by comparing notes and exchanging samples of advertising that the trade gets new ideas and makes progress that pays returns as well as keeps alive the spirit of enterprise in the matter of advertising.

BETTER HOME PROPAGANDA.

There is promise of quite a lot of interesting propaganda calculated to awaken interest and keep alive the spirit of better homes. Also along with it there are some serious architectural and engineering reviews pointing to the progress that has been made and the probable further progress of the future.

A recent incident was reviewed in the Literary Digest under the suggestive title of the "Passing of the Shack." In this digest from an engineering review it is said that we have grown out of the shack town period of the Chicago conflagration, but we do not yet strive for permanence in the fullest sense. Nowhere are houses planned and built to be lived in as homes for long decades. There is an undercurrent of feeling in this that we need a more conscientious spirit of pride in and desire for permanent home building.

Meantime along comes some data from an organization to promote better homes and home furnishing called the American Homes Bureau, with headquarters in Chicago, illustrating a waste of money for pleasures and vanities which it is thought ought to be in a large measure at least diverted to the better building and furnishing of homes. After pointing out that the sales of soda water, chewing gum, perfume, face powder, motor cars, cigarettes, mount wonderfully, it is said the baby car sales have suffered while the census figures

show \$59,600,000 spent for perfumery and cosmetics, and a number of other vanity items grouped under this head brings the total up to \$850,000,000 a year. Movies, theatricals, dances are listed as consuming \$3,000,000,000; candy, ice cream and confections, \$1,100,000,000; cigarettes and tobacco in other forms, \$900,000,000. These, then, are added to a total of \$4,300,000 for automobiles and tires and it is argued that this reckless cost of building is putting us in bad shape so far as building good and proper homes and furnishing them as they should be furnished is concerned.

There is manifested some disposition toward fault finding about the indulgence in pleasure and vanities rather than in better home equipment. And there is room for this, too, but it will not likely prove effective. It is too much like railing at people for not attending church, whereas the proper way to get people to church is not by fussing at them but by reaching them with some kind of appeal that would make them want to go. It is the same thing in the matter of building better homes and keeping them better furnished. The way to bring this about is not through pointing the extravagance of yielding to pleasures and vanities. The way is rather through selling the home idea through publicity and better homes propaganda of the kind that makes a right appeal. This is a thing, too, that should awaken a keen and active interest on the part of clay products people because when it comes to building for permanence and pride of structure these are the natural and superior items. Therefore, every manufacturer of brick, hollow building tile, terracotta or other clay products going into structural purposes should be an active booster in his own home town for better homes. And he may well also take an active part in the general movement to encourage a keener interest in better home building.

A LITTLE ENCOURAGEMENT HELPS.

We usually find about what we are looking for in this world. If we have no confidence in our assistants and our business associates—and show it, we are almost certain to find ample occasion for doubting them. On the other hand, if we are looking for evidences of ability, worth, reliability, trustworthiness, and initiative, and are willing to give a word of well merited praise, we will seldom have reason to be disappointed. The innate nobility which exists in the average individual will arise to meet the good opinion held by those whose approval is valued. Exactly the opposite is true, also. If a helper gets the idea that his motives and capabilities are thought lightly of or doubted, resentment springs up and that individual fails to do his best. It is a case of sinking or rising to meet the opinion of those about us. Let's help others up—not down.

THE HOOVER IDEA.

The Hoover idea of having the government let up on its work program in so far as practical while private enterprise is so busy that it is furnishing employment for everybody is not a new idea. Putting it into practice, however, is a new movement, and one that will be watched with interest.

There has long been advanced a good theory that the government, and by this is meant not only the national government, but state and municipal governments, could help out considerably in maintaining a good and persistent measure of prosperity and industrial activity. During periods of business depression they can help by putting on more work toward public improvement, and they can slow down in this when workers are needed for private enterprise, and thus

furnish a sort of industrial clearing house comparable in a way with the Federal Reserve Banks in our financial system.

It is not as easy to do this as it is to set forth the idea. You can't start big undertakings in the way of improvements on a moment's notice, or discontinue them suddenly because they interfere with private enterprise. But it is practical to inaugurate a general plan by which government employment and improvement undertakings can be speeded up or slowed down in harmony with the requirements to preserve a fair balance in the general employment and industrial activity of the country.

A few hardships and inconveniences may result, but good can come of it, and by his efforts to put this idea into action Secretary Hoover seems to be rendering service of positive value to the country.

WILL P. BLAIR SAILS THE OCEAN BLUE.

The long cherished wish of Will P. Blair, vice-president of the National Paving Brick Manufacturers' Association, Cleveland, Ohio, is being realized. As these lines are being written he is hobnobbing with the world's foremost highway experts in conference at Seville, Spain. He sailed on the good ship Olympic, April 28th, to attend the International Road Congress. He is expected home about July 1.

FIRE BRICK PLANT PROPOSED FOR COAL GROVE, OHIO.

The Carlyle-Labold Company has under advisement plans for the erection of another plant at Coal Grove, Ohio, for the manufacture of fire brick. T. E. Carlyle, who is the senior member of the firm, has charge of the plans which will be announced in the near future.

GAINESVILLE (TEX.) BRICK CO., WILL ENLARGE PLANT.

Jos. Curtis and Geo. Brown, Gainesville, Tex., have acquired the plant of the Gainesville Brick Company. The new owners are forming a company, capitalized at \$75,000, to operate the works and plan for extensions and the installation of additional equipment.

LIVE FACTS OF VITAL INTEREST.

There is much interesting and instructive matter in the six-page spread of the Hadfield-Penfield Steel Company in the following pages: As tersely stated on page 593, "After all, results are what you want." If our readers will read and heed the suggestions contained in our advertising pages they will profit thereby to a much greater extent than is ordinarily comprehended.

BUSY TIMES IN THE SUNNY SOUTHLAND.

Brick and tile manufacturers of the South were never busier than they are this year, and as a result the machinery and supply people are in the same happy condition. A recent visit to Statesville, N. C., afforded an opportunity to go through the shops of J. C. Steele & Sons, manufacturers of brick and tile machinery. Notwithstanding the fact they have enlarged their foundry and machine shops and facilities in every way, they are obliged to work overtime to meet the demand for their products, which the reader will find listed on page 630 of this issue.

There is some sweetening of the business situation now for the consumer in both sugar and coal.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker; published monthly at Indianapolis, Ind., for April 1st, 1923.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall,

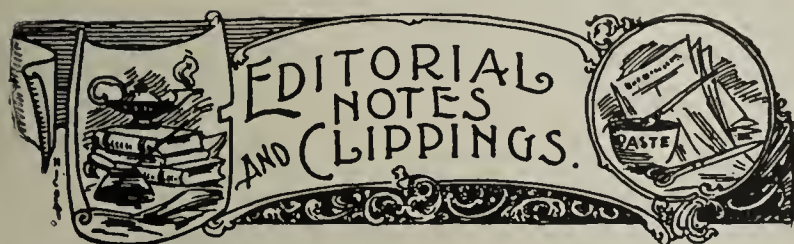
Editor and Business Manager.

Sworn to and subscribed before me this 20th day of March, 1923.

(Signed) CHRISTA A. LEWIS, Notary Public.

(Seal)

My commission expires June 30, 1925.



The Chicago Fire Brick Co., 133 W. Washington St., Chicago, will spend \$30,000 on additions to its plant.

C. D. Gregg, T. A. Bartlett and A. S. Coke have incorporated the Athens (Texas) Fire Brick Co., with \$25,000 capital stock.

Frank S. Miller of Philadelphia, Pa., has purchased the plant of the Pennsburg Brick Co., Pennsburg, Pa., from Wilmer Leedom.

The Krauss Research Laboratories, Inc., has announced the removal of their offices and laboratories to 110 West Fortieth Street, New York City.

The Southern Oregon Clay Products Co., with offices at Medford, Ore., will build a plant at Central Point, that state. Construction on the plant was started May 1.

Work will be started this week on the erection of two additional kilns at the Auburn Shale Brick Company, Gettysburg, Pa. One kiln will have capacity of 70,000 bricks and the other 52,000.

The Standard Conveyor Company announces that it has acquired by purchase all the rights, titles and patents pertaining to the well-known "Brown Portable" line of portable and sectional piling, elevating, conveying, loading and unloading machinery for the handling of packed and loose materials.

The plant of the Atlantic Builders Supply Co., at Atlantic, Iowa, started operations for the season, May 1. C. W. E. Dallinger, of many years' experience in the brick business, is superintendent. The company has enough orders for both brick and tile on hand to keep the plant busy for a long time to come.

The Chester Brick Co., of Chester, Pa., is adding some new machinery, including a brick press, with a view of increasing the capacity of the plant. The company reports a splendid demand for their brick, not only locally, but from nearby towns. B. D. Wright, J. C. Taylor and J. H. Brown are interested in the company.

The Rowe China Co., which was recently organized in Los Angeles, Cal., will erect a seven-kiln pottery unit. It is planned to later on increase this to a thirty-kiln plant. The officers of the company are Gordon E. Hitchcock, president; John A. Rowe, Sr., vice-president; G. H. Hitchcock, secretary, and H. E. Wier, treasurer. The company plans to spend something like \$2,500,000 on the plant.

The Kusa Brick and Tile Company, Henryetta, Okla., of which J. R. Nicholson is manager, is increasing the output of its plant from a million and one-half to two million brick per month. This plant has just completed an order of rug faced brick for the Kansas City Title and Trust Company,

Kansas City, Mo., for its buildings on one of the most prominent downtown corners in that city.

The Baldwin Brick Co., of Boston, Mass., has been incorporated. The capital stock is given as \$175,000.

The Cortland Brick Co., of Montrose, N. Y., has been organized by J. Gritz and H. Gross. The company is capitalized at \$50,000.

Sage Brick Manufacturing Co., Greenport, L. I., which has one of the best equipped yards on Long Island, has installed a new system for drying brick.

The Citizens Lumber Co., of Parkersburg, W. Va., has purchased a brickyard at that place, and 278 acres of ground adjoining the plant. They will erect a large brickmaking plant.

The Van Buren Brick & Tile Company has been incorporated at Van Buren, Ark., with \$150,000 capital stock. J. W. Hansell is president; W. J. Martin, vice president, and H. C. Rains, secretary and treasurer.

E. V. Gruber of Ord, Neb., has purchased the factory of the Mendota Tile Co., at Mendota, Ill. He is interested with his father in two tile factories in Nebraska, but will make his home in Mendota, giving his personal attention to the factory there.

James M. Evans and John Mattiussi, of Elkton, Md., are interested in the Bacon Hill Brick Company, recently organized at Elkton, Md., with \$80,000 capital stock. They will build a plant for the manufacture of common brick and other clay products.

The Hudson Brick and Supply Company has been granted a charter and will erect a plant at Alexandria, Va. The officers and incorporators are: Henry W. Heine, president; Edwin K. Le Fovre, secretary and Paul V. Rogers, all of Washington.

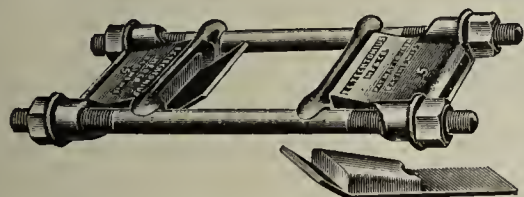
The Harbison-Walker Refractories Company of Pittsburgh, Pa., announced a ten per cent increase in wages of their employees, which became effective April 16. The increase affects all classes of laborers, including the clay-miners. Under the new rate, common laborers will receive from \$3.50 to \$3.85 per day.

The plant of the J. A. Miller Tile Company, at Bascom, Ohio, was destroyed by fire in April, causing a property loss of about \$50,000. The fire, which is supposed to have been of incendiary origin, started on the roof of the clay shed and spread quickly to other buildings. The plant had recently been equipped with new machinery and electric motors.

Announcement of an increase in pay of 50 cents a day for all classes of factory workers and clay miners in eight plants of the W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., was made by Fred L. Dickey, general manager of the company. The increase affected approximately 1,200 men employed in plants in Kansas City, Deepwater, Mo., Versailles, Mo., Pittsburg, Kas., and Macomb, Ill.

The Fort Smith Brick Co., of Fort Smith, Ark., has been merged with the Acme Brick Company of Fort Worth, Texas, according to announcement made by W. R. Benning, president of the latter company. The company will be known as the Acme Brick Company. The capacity of the Fort Smith plant will be increased about fifty per cent, giving it a yearly output

PROTECT COSTLY KILNS—



TECKTONIUS
Kiln Band Fastener

—with the world's best band fastener, the famous wedge-action Tecktonius Lug. Read What Users Say: *** "We could not be induced to use any other" *** "We are through experimenting, we are using Tecktonius" *** "Most satisfactory lug on the market" *** Have used your lugs for thirty years—no expense for repairs" *** We are using 476 of your lugs and are placing an order for 100 more".

Add years to the life of your costly kilns. Make your bands effective. Send for our catalog and price list—today.

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U.S.A.

EDITORIAL NOTES AND CLIPPINGS—Continued.

of about 18,000,000 face brick. Roy G. Smith, vice president of the company, will have charge of the Fort Smith plant.

The Fox Shale Brick Company has been incorporated at Tuscaloosa, Ala., with a capital of \$7,500 by James G. Foster, James J. Foster and B. H. Frost.

The Atlantic Brick Co., Mays Landing, N. J., plans for the immediate rebuilding of its plant and power house destroyed by fire April 26, with loss of \$150,000.

W. H. Lighthouse, manager of the Lucas Brick Works, Houston, Tex., is optimistic over the outlook for the coming season. The Lucas plant, which has a capacity of 40,000 brick per day, has been in its present location for 28 years and has supplied brick for many of the largest buildings in Houston.

The Vitreous Products Company of California is now building a large brick plant at San Diego, and has under way plans for another plant at Anaheim, and one at Los Angeles, Cal. George W. Kummer, a man of wide experience in the clay industry, is secretary and general manager of the company. They will manufacture face and common brick, roof and drain tile, hollow building block and sewer pipe.

The plant of the Drury Brick & Tile Co., at Essex Junction, Vermont, started operations for the season the last of April. During the enforced idleness of the plant, a number of improvements were made including the installation of a new automatic brick machine of 60,000 daily capacity. A new track has been laid from the clay banks on which a gasoline locomotive will haul the clay direct to the machine room.

This line of machinery has been manufactured by the Brown Portable Conveying Machinery Company at North Chicago for ten years. Until further notice the plant will be continued in operation by the Standard Conveyor Company, and all inquiries and correspondence regarding "Brown Portable" products should be addressed to Standard Conveyor Company, "Brown Portable" Products Plant, North Chicago, Ill.

The Benner Brick Company of 1245 First Street, N. E., of Carthage, N. C., which was recently chartered with a capital of \$200,000, has effected an organization with the election of Billie H. Benner as president and W. P. Benner as treasurer. The company will make improvements on its plant and the daily output will be from 18,000 to 20,000 brick a day. The company is seeking prices on a brick machine with a daily capacity of 25,000 to 30,000 brick. The company also seeks prices on grates to burn coal for square kiln about 20 to 21 feet wide.

At the recent annual meeting of the stockholders of the Columbus Fire Brick Company, reports were made showing the business for the last year had been very satisfactory, and plans are under consideration for enlarging the plant. At the election of officers, Edgar A. Bowman was elected president, succeeding Judge Henry A. Wise, who has retired from the concern, disposing of his interests to other stockholders. The other officers elected are W. H. Hobart, of Medina, vice-president; F. Roudebush, Covington, Ky., secretary, and A. L. Sell, of Canton, assistant secretary.

Mr. Jos. W. Hays is just completing the organization of a corps of consulting combustion engineers to be known as Jos. W. Hays & Associates. The headquarters of the organization will be Michigan City, Indiana. The new firm will be prepared to render consulting service in steam plants in all parts of the country. Every man in the organization will be a combustion expert of wide practical experience. No change will be made in the place of residence of any of these associates. Each member of the organization will look after the engineering work in his immediate territory.

B. C. Dawson, owner of a brick plant in Jefferson City, Mo., has announced that he is planning to install machinery for the manufacture of matt face brick. The Dawson plant is one of the best equipped in central Missouri, and additional improvements are to be made from time to time as the business demands. Mr. Dawson reports that the plant has been running at capacity and has been able to supply all of the brick that has been demanded by Jefferson City contractors. The product of the plant at the present time is a pressed clay brick, which has been pronounced very good by those who have inspected it. With the addition of the matt face brick

machinery for next season the plant will be in a position to furnish the material in this line for the city's needs.

Fletcher Terrell of 219 South Third Street, Paducah, Ky., has announced that he is in the market for brick yard supplies and equipment.

The Mahoning Valley Brick Co., of Punxsutawney, Pa., has been incorporated with \$40,000 capital stock. B. M. Williams of Corsica is the principal stockholder.

A number of improvements and changes have been made in the plant of the La Junta (Colo.) Clay Products Co., which gives the plant a greater capacity. S. A. Kammerlohr, the manager, recently discovered a bank of clay in the vicinity of the plant which makes a fine buff brick for which there is a great demand.

Mr. N. Hermes, who has for the past seven and one-half years been superintendent of the Muskogee Vitreous Brick Company of Muskogee, Okla., has accepted a position as general superintendent for the Nicholson Clay Products Company, of 818 Commerce Buildings, Kansas City, Mo., which operates a string of plants in Oklahoma, Kansas, Missouri and Ohio, and manufactures most anything in the clay products line.

Two million dollars' worth of fire clay is said to have been purchased by the Los Angeles Pressed Brick Company from the Alberhill Coal & Clay Company recently. The block of fire clay contains two million tons, and will supply the various plants with raw materials from which to manufacture many kinds of clay products, which will be shipped to all parts west of the Rockies.

While adjusting the clutch on a brick press at the Utah Fire Clay Co. at Salt Lake, F. A. Van Patten, 53, master mechanic, was crushed to death. His clothing was caught and the man's body dragged into the clutch, before his son, who served as assistant for the elder Van Patten, could turn off the current. The man suffered fatal injuries from which he died about a half hour later.

The General Refractories Company of Baltimore, Md., has purchased the American Refractories Company. By this deal the General Refractories Company brings its annual capacity to about 300,000,000 brick and makes it the second largest producer in the country. The purchase adds particularly to the company's silica and magnesite brick capacity, as the American Company has not been a great producer of clay fire brick.

The Mid-Continent Clay Co., of Peru, Kas., through their southeastern states representative, the B. Miffliu Brick Co. of Atlanta, Ga., have secured the roofing tile contract for the Louisiana University buildings, Baton Rouge, La. This is one of the largest of roofing tile contracts on the market in this country and on it the Mid-Continent Clay Co. will furnish their Midco Peruvian tapered mission tile in various colors.

Robert Berner, formerly vice-president of the Hetherington & Berner, Indianapolis, announces he has severed his connection with that concern and is now operating a structural steel and ornamental iron works at 401 S. Harding Street, Indianapolis, under the firm name of Robert Berner Structural Steel Co. The new company is prepared to handle efficiently all engineering, fabrication and erection of structural steel and ornamental iron work.

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Trust Bldg.

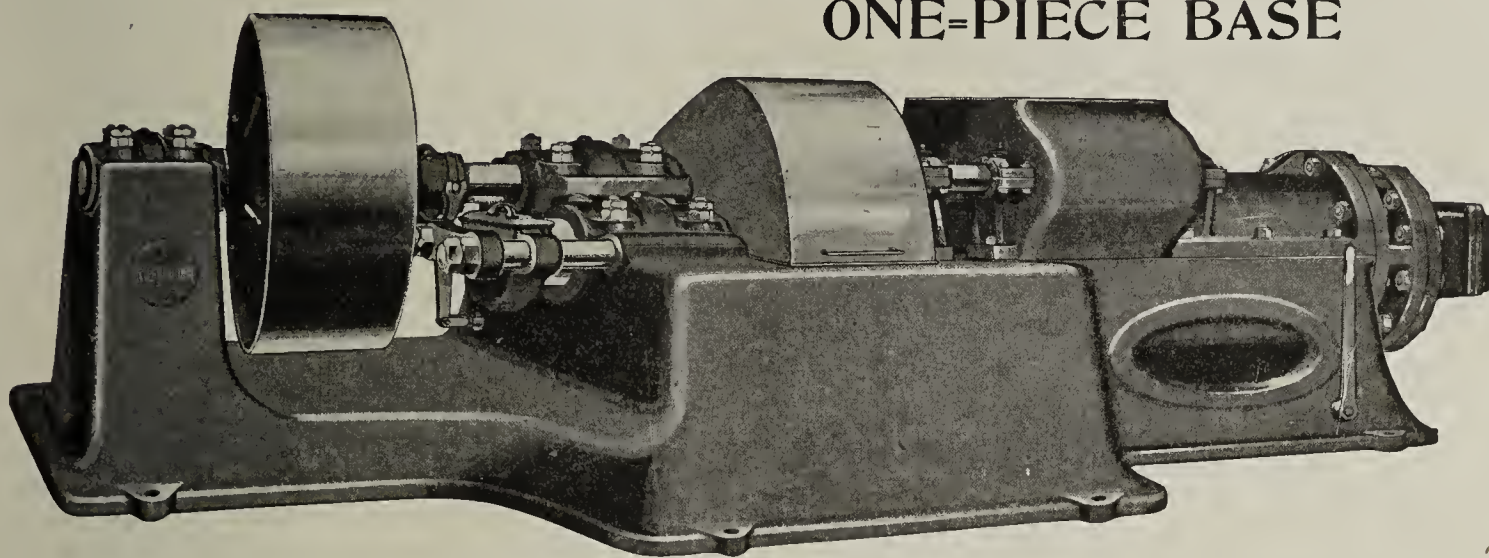
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705 Markle Bank Bldg.

AUGER MACHINES

PATENTED

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ONE-PIECE BASE



Ask for Bulletin No. 30

DRYERS

METALLIC RADIATION
WASTE HEAT



“More Radiation per foot of Tunnel.”

Ask for Bulletin No. 40

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Mention THE CLAY-WORKER

Written for THE CLAY-WORKER.

THE NEW YORK SITUATION.

DIFFICULTIES ARE again arising between the employers and employes. During the past week the construction industry has had a slight set-back. In the face of things, this seems to be an inopportune time. The whole situation can be directly traced to the payment of bonus wages which has been going on for quite a period, and it was foreseen that trouble would be started.

The trowel trades seem to be the only ones that are shifting for position. The journeymen stonecutters and helpers are the first to start. It can be seen that these men stopping work will automatically close up the larger jobs as the other trades are affected to a greater or lesser extent. It is claimed they are not going to ask other trades to join them as they realize other artisans will have to stop due to lack of work caused by them.

On the employers' side, they are determined to stand firm against a higher scale at this time. This is sound business policy. Many of the employers stand to lose by an advance in the wage scale. Then, this move by the stonecutters was consummated and no notice given to the employers until after the move had been made.

Some think there will be a relatively small number of jobs affected by this strike, but with this in mind, the situation as a whole has a serious aspect. This can be attributed to the unrest prevalent in the building trades over this question of advanced wage scales and more outbreaks are expected any day. Many builders look for a period of suspense while a settlement is being made or perfected. Others are of the opinion that the industry will not be hampered to any extent.

Activity has shown a slight decline during the past week or ten days, due to the serious aspect of the labor situation. But from the sources of supply come the reports that business is brisk and they are taking all they can handle with efficiency. From many come the report that the maximum supply is about reached and the producers are rushing their plants to full capacity, with overtime being given to keep abreast of the demand and the orders coming in. This gives rise to a firmness in materials and which will be subject to advances in the future and these without notice.

As a whole, the demand is very strong and common brick are being taken as soon as they arrive from the yards. The up-river plants put a total of 53 barges into this market last week and all were promptly disposed of to dealers for immediate distribution.

The weather for the past fortnight has had much to do with the drying out of the yards along the Hudson river, and as a result practically all of the plants have now started the season's operations. The labor situation is not what it should be, and in consequence a shortage exists. The fuel situation is better than that reported a year ago, and it is too early to predict what will happen as the plants work up to the maximum production. The price of the best grades of Hudson river commons is \$20.00 wholesale to dealers alongside the dock. The demand is strong with the prices firm and as yet unchanged.

The prospect of labor difficulties has not seemed to have any material effect in slowing down the demand for face brick, and dealers and producers are being pushed to the limit with new orders. Several operations were halted, due to the delayed deliveries which cannot be attributed to any fault of the dealer or producer. This condition is only temporary. The prices remain firm, with indications of remaining at this level

for an indefinite period. The prices as a whole are: Smooth and Rough Reds, \$42.00; Smooth and Rough Buffs, \$45.00; Smooth and Rough Grays, \$50.00, with Colonials at \$47.00.

Hollow Tile is holding its steady pace in demand with but slight increase or decrease noted. The prices generally are 3 inches, 12 cents per square foot; 5 inches, 17 cents per square foot, and 6 inches, 19 cents per square foot.

According to the report of the Dow Service, under date of May 12, the price of Hudson river brick is standing at \$20 a thousand wholesale, to which, for delivered price, add handling, haulage and 10 per cent., exactly where it was at the first of the year, and before, in spite of the fact that coal costs more this year than last, that increases in wages have been paid to brick handlers, that labor costs more on the yards, and in spite of the fact that while the normal number of barges about the five boroughs and Newark, is eighty to ninety, there were on Saturday only 40 boats at all unloading points and the demand was so great that unloading was proceeding at the rate of 100,000 to 150,000 a day.

Barnes, McNamara and Morrissey, one of the largest brick distributors in the city, said that as far as they knew they did not look for any price movement upward under present conditions, that the market was being supplied with brick as fast as it came in and that outside of an actual scarcity of this commodity for the next two or three weeks, there was no danger of brick prices advancing further, unless manufacturing costs were arbitrarily advanced by heavier demands by yard laborers. No future orders are being taken, to speak of, owing to this uncertainty, but the disposition is to match the gauntlet laid down by New York building craftsmen and keep construction costs from going higher.

—A. L. B.

NEW FOUNDRY TO BE IN OPERATION AUGUST 1.

The Taplin-Rice-Clerkin Co., Akron, Ohio, writes that their patterns, which were destroyed by the fire which did so much damage to their factory last month, are rapidly being replaced. Contracts for new buildings have been let, and the new plant will be running full blast by the first of August. The capacity of the new factory will be fifty per cent more than the old one. The company is having about half of the usual production made in outside foundries.

Work on the large four-story drying and machinery house for the American Vitriified Products Company at Lisbon, will soon be started. The building when completed, with machinery installed, will cost approximately \$125,000. In addition to the new building a large new kiln is to be built that will increase the output. The plant was destroyed by fire early in March.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

Reduce First Cost, Fuel and Time

With the Minter System the kilns are connected to operate periodically, semi-continuously or continuously, and to water-smoke with waste heat or fuel direct. With the Minter System your kilns will meet any requirement of any material—any draft in any stage of any process can be instantly applied—and the water-smoking and decarbonizing periods can be handled so rapidly that time is almost negligible by comparison with ordinary down draft kilns. Each process can be adjusted to the highest speed that any material will stand.

We have records of raising the temperature from 1000 to 1300 degrees Fahrenheit in one hour, and of burning 18 kilns in 28 days, of cooling kilns of tile in two days.

Increase Your Kiln Capacity

On average operation 10 of our kilns will produce more than 15 periodical kilns. **The same ratio is maintained in our dryer.** If you wish to build a 15 kiln capacity plant we can save you \$30,000 in first cost of kilns and \$10,000 in first cost on capacity basis for drying material to supply kilns.

No matter what capacity plant, we can save you money, can shorten your burn, reduce labor cost, decrease fuel need and increase materially your kiln turnover.

Investigate, or You Will Lose

Write for complete details and plants using our system.

THE MINTER SYSTEM

Albany
Exchange National Bank

=

GEORGIA

=

Engineering Office
Columbus
210-215 Doctors Bldg.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.



HE ACTIVITY throughout this state is as brisk as in its sister state. The same fluctuations are felt and in the same ways. There is some speculation as to the effect of the strike now in progress in New York. When the suspension of operations culminated last week in the Metropolis, it was but a short period before it had spread to the larger building centers within our bounds.

All elements connected with the building industry are making every effort to preserve their optimism regarding the whole situation. Some, however, seem to view the outlook with a chaotic aspect. Others, to be sure, are still hoping and have a firm belief that strikes and lockouts over increased wage questions may be entirely averted.

From appearances at this time, the situation begins to look like a case of "runaway labor." The general opinion among employers is they are on the verge, and unless something is done to stop the demands of labor for higher wages and bonus payments, a very bad situation will be the ultimate outcome.

There have been some demands made by certain trades that are sure to affect all labor elements. This is borne out by developments already recorded and giving rise to this thought and attitude.

The situation in several other trades is just as acute as in the trade now striking. In some trades the employers have come out strongly against any arbitration of the matter. At present it amounts to an impasse between employers and workers. It is likely that further developments, either pro or con, will occur before the end of this week.

The bonus system is no doubt to blame for this mixture of good-and-bad outlook. The agitation for higher wages practically resulted from the movement of the trowel trade to enforce the employers to pay higher wages this season. By the contractors paying a bonus, the trades saw an opportunity to get increased schedules for themselves. Every one is aware that there are not enough men to care for work already in hand and the contracts to be settled in the future.

With conditions as at present, the average builder and also the employer hardly knows what to expect. All those discussing the situation admit that there is almost double the amount of new construction now under contract than the industry has facilities to handle. This has naturally created an extraordinary demand for both the skilled and unskilled labor, and according to the law of supply and demand, wages go up along with material prices, in spite of all the efforts expended by employers to the contrary.

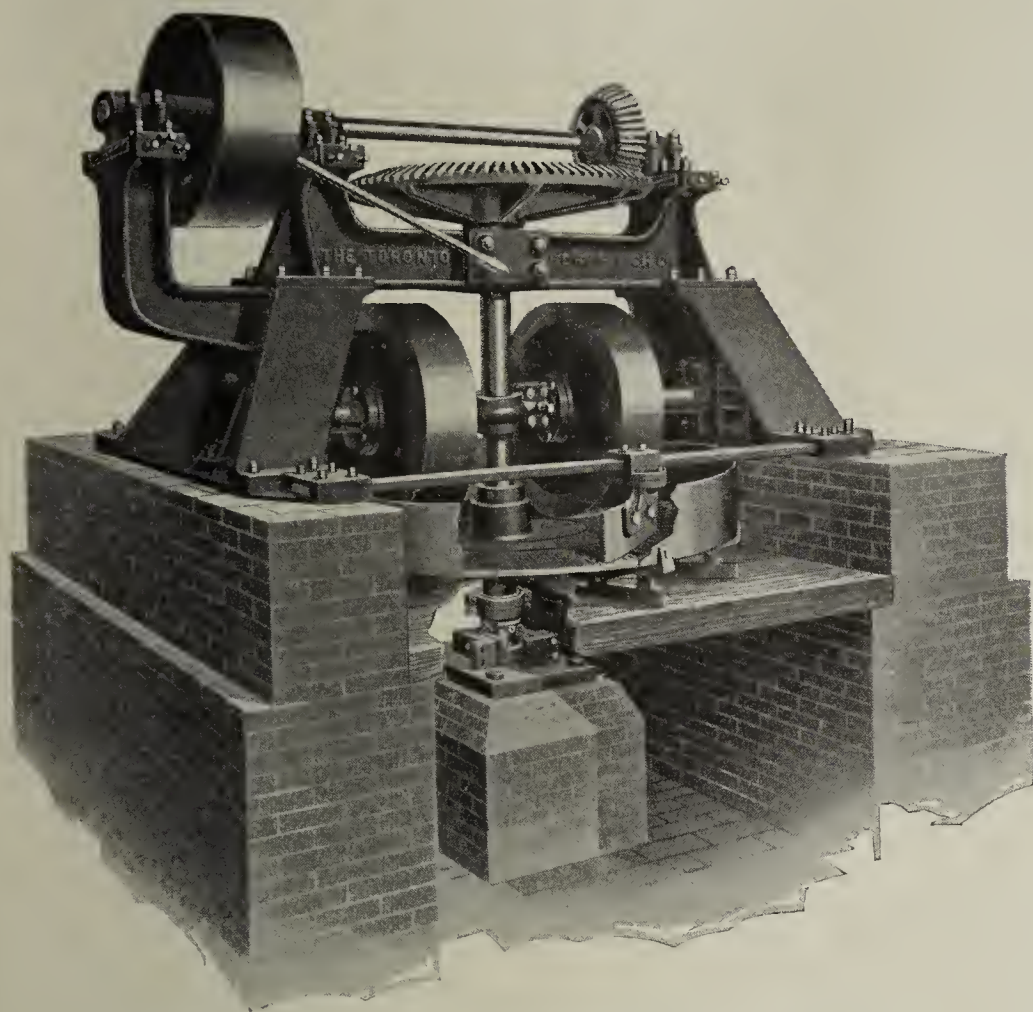
With the strike situation holding the attention of some, others are thinking of another outlook that has as great a bearing on the future and that is the possibility of a buyers' strike. The prospects are bright in the material market if price peaks are used as a basis for speculation.

The same symptoms that brought about the sharp economic reaction in the building industry in 1920-21 have appeared in 1923 markets.

There has been a company formed to operate a pottery in Trenton, N. J., for the manufacture of fine chinaware. It is to be known as The Duo-Art Belleek Co., Trenton, N. J., and is headed by Charles L. Conrad, Harry Klag, Jr. and H. T. Satterthwaite, 137 East State Street. The company's representative is L. Satterthwaite of the above address. It is capitalized for \$50,000.

It is reported the New Jersey Porcelain Co., Trenton, N. J., is erecting a new plant to cost \$60,000. —BURTON.

WHY COUNT FIRST COSTS ONLY



TYPE 'B' 10 FT. DRY PAN

When selecting new grinding equipment it will pay you to investigate the comparative cost for repairs. TORONTO pans will save you in the cost of spare parts more than the difference in first cost. This is an item well worth your consideration when installing a new machine.

**INSTALL TORONTO PANS
AND REDUCE MAINTENANCE
COSTS**

**THE TORONTO
FOUNDRY & MACHINE CO.**

Toronto, Ohio

Mention THE CLAY-WORKER.

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



WITH THE COMING of seasonable spring weather brick and tile manufacturing plants of the Badger state have started on a season of production that promises to be up among the leading outputs of the industry in Wisconsin. Building construction in Milwaukee during April shattered all previous records with the unprecedented total value of \$6,389,108. During that period 3,584 permits were issued by the building inspection department, this total being equal to more than 20 per cent. of the total for the entire year of 1922. During April last year 3,284 permits were issued representing construction valued at \$3,444,992. Prior to this month the greatest total for any thirty day period was made in October last year with \$3,500,000. April this year was nearly double the previous high mark. Since the first of the year construction in Milwaukee now totals \$11,510,234, representing 10,333 permits. This is \$2,000,000 greater than the corresponding period last year.

E. C. Guhr & Sons, owners of the South Milwaukee Brick Co., near Milwaukee, have plans ready for the construction of a large dry kiln building. Work will be started as soon as possible. The new building will be 200 feet long, 50 feet wide and 30 feet high. It will be laid out so that trucks for hauling the bricks can run in and out of the kiln at almost any point. The company is also awaiting the arrival of some large brickmaking machinery which is in transit from the factories. This machinery will not be installed for operation before another two months, it is expected.

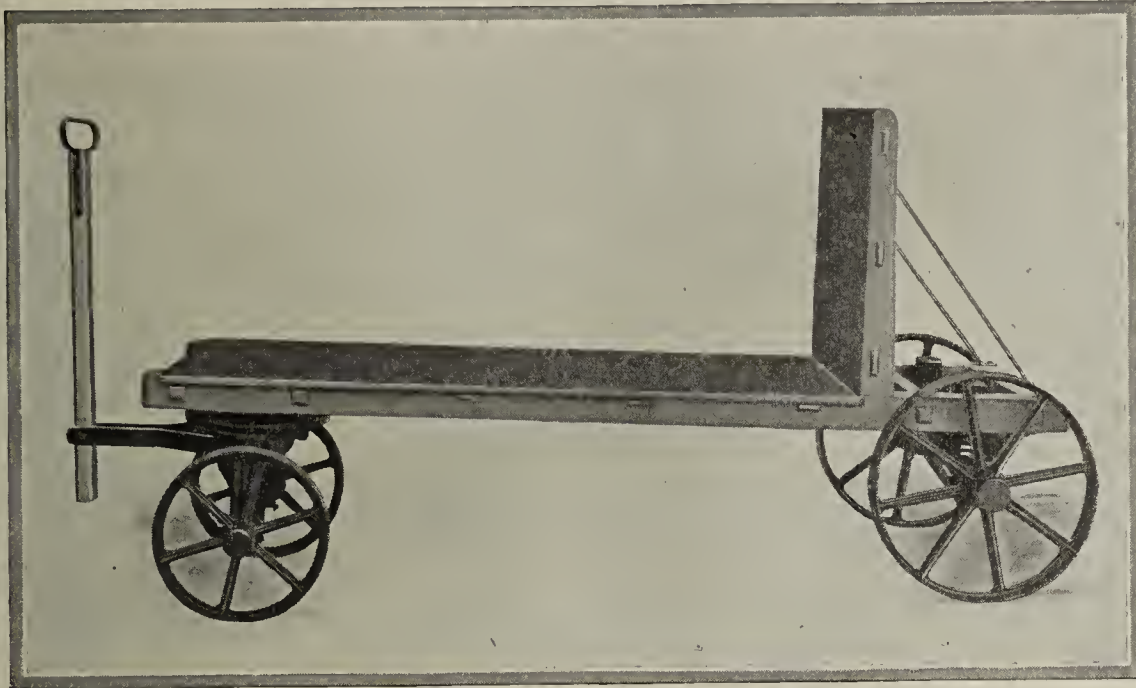
The Wisconsin Tile Advancement Association has been organized at Milwaukee by C. Stark, P. Becker and J. Devils, for the advancement of the tile industry.

The Northern Clay Products Co., of Manitowoc, has been incorporated with a capital stock of \$60,000. L. B. Lange, C. M. Kellermann and H. M. Sweet are the incorporators. The concern purposes to engage in the manufacture of brick and tile products.

The Stanley Red Pressed Brick Company, of Stanley, has filed articles of incorporation with \$25,000 capital stock, to engage in the manufacture of brick. The incorporators are John J. Long, M. Johnson and L. L. Hanstad. The Stanley brick yards will be operated this summer as usual and perhaps on a larger scale than ever before. The corporation organized has closed contracts with the Northern Lumber Company for the purchase of the property. Among the local men interested and who have taken stock in the corporation are Louis Hyland, C. N. Olson, C. W. Dodge, John J. Long, Louis Hanstad, C. B. Culbertson and Ed C. Johnson. The railroad trestle across the pond and leading from the main right of way to the yards will be straightened so as to permit the Soo Line engines to haul the brick from the plant to the main line for shipment.

The 46 acre brick yard equipped to manufacture 250,000 bricks daily and to be opened by Burnham Brothers Brick Company, of Milwaukee, near Carrollville, will be in operation this month. Approximate cost of ground and equipment is \$300,000. The annual output, according to George E. Burnham, president, will be 35,000,000 building bricks. Announcement of plans for this project was made in these columns early this year. The new Burnham plant will be the largest brick yard in Wisconsin. A number of buildings have been erected with all modern improvements to speed production.

A BADGER.



The Siner Hand Wagon Eliminates Another Weak Link in Brick Manufacturing

FEATURES

- Handled by one man.
- Four-wheeled—no spills.
- Substantially built for hard work.
- Dry White Oak lumber.
- Steel wheels—broad tread.
- Roller bearing.
- Front wheels turn under body.
- Convenient folding handle.
- Bottom and back No. 12 gauge steel plate.
- Furnished with or without Springs.
- Handle different shaped brick.

THIS new Truck—or wagon—is a combination of wheelbarrow and dry brick car. It has all the advantages of both and none of the disadvantages.

The dried brick are placed on the body of the wagon in exactly the same manner as on a barrow and the process of tossing the brick off the wagon is easier than the process of tossing them off the barrows.

Another important feature is that the wagon can be efficiently handled with less skillful and less experienced wheeling labor than the older styles of barrows and trucks.

WELL ADAPTED TO HANDLE FIRE BRICK

Not only the nine inch straights but arch and circle brick—as well as cupola blocks—are ideally handled in this new wagon.

AN UNUSUAL OFFER

On request, one of these Trucks will be shipped to you on trial and you can tell whether or not it is worthy of a place in your Plant.

Of course, you want these new Wagons in your Plant.

LANCASTER IRON WORKS, Inc.
Lancaster, Penna.

Brick Machinery Department

James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.

AutoBrik Machine

Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terra cotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

The book also contains a supplement on the subject of **Crazing, Its Cause and Prevention.**

Price \$5.00

T. A. Randall & Co.
Publishers Indianapolis, Ind.

STANDARDIZED COSTS FOR CLAYWORKERS.

(Continued from page 557.)

tant still, is the fact that this production order in a clay plant marks off the lot produced into units that permits an accurate distribution of costs.

The production order is a definite instruction to the foreman. It can be a very simple outline of what is wanted. All that it has to contain is the order number, the quality of wares required, and the time allowed to do it in. This method fixes the responsibility very definitely. Where only one product, such as common brick, is produced, the order is used for cost purposes only, and to establish a record of the efficiency of the plant as a whole. The record of the quality of clay consumed in the manufacture of brick or other ware is a very important part of the cost record. It may be made subject of a special report or it may be derived at from the labor records.

The report of work done is the most important form of all and without it the cost system is worthless. It is the time report of labor and, as will be seen later, it forms the foundation of the entire cost keeping structure. The amount of detail that appears on the report depends entirely on the size of the plant and the extent of supervision possible. At least, it is necessary to know the name of the worker, the date, the order number to which his time may be charged, and the quantity of work completed during any given time. The fact that the cost of each lot or each order is to be calculated separately, makes it necessary that a new card should be filled out for every order the man works on.

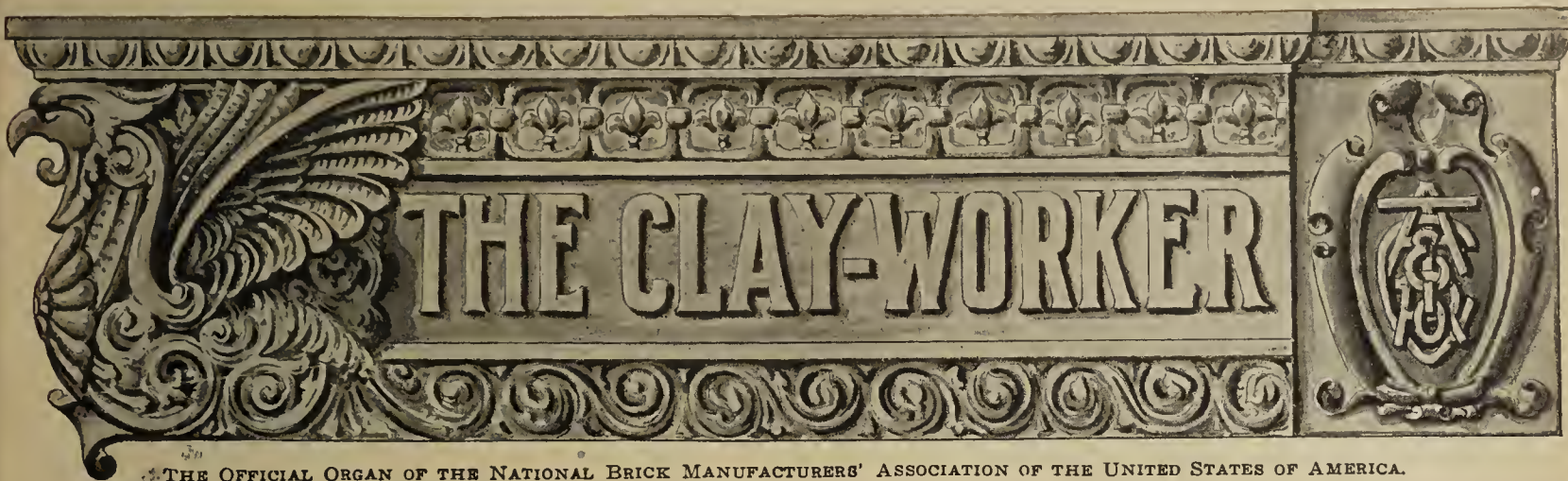
All the documents that are essential for the collection of costs have now been discussed in a general way. These are the time cards, the material, and expense charge slips. How these reports are carried to the cost records will be treated with next. It must be remembered that every order was given a number. All work and all expenditures necessitated by this lot of ware are connected with it through the order number. The quality of clay consumed can be determined from the shovel operator's report.

HOW MUCH LUBRICANT?

THE flywheel test is the best one I know of for determining the proper quantity of oil to use in a steam engine. The test is very simple. Just pull out your watch and take the time required for the engine to come to a stop after shutting off the steam. The longer the stopping time the better.

It is plain that if a flywheel weighs, say, 2,000 pounds, it has a definite amount of energy stored in it when running at normal speed. Therefore, when steam is suddenly shut off, an equal amount of energy is dissipated every time the engine stops. With all conditions the same, then, an exactly identical length of time will be consumed in stopping every time the throttle is closed. By noting the stopping time every night and by altering the quantity of lubricant fed to the engine every day, the proper amount is in time determined.

The important thing is that external conditions must be the same every time the stop test is made. If the engine drives a belted machine, it is therefore best to throw off the belt and take the stopping time with the engine running unloaded. Under that condition longer time is consumed in coming to a stop and comparison of stopping times is made easier. In other words, the test is more delicate.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 79

INDIANAPOLIS, JUNE, 1923.

No. 7

ART IN BRICK WORK: Attractive Displays of Fine Front Brick Which Offer Convincing Evidence of the Abiding Beauty and Charm of Brick Construction. Various Color Schemes Shown in Panels and Artistic Designs.

A GREAT AMOUNT of careful consideration in the preparation and arrangement of brick panels and in the proper setting of same, in display rooms, is needed these days to bring more forcibly to the attention of the

prospective purchaser the true values of the various shades and colorings. The visitor has in mind some special color to harmonize with the house trim, the shades, or the color predominating in the neighboring houses or shrubbery. If this particular panel of brick is placed in such manner that the coloring in the adjacent panels jars, the quick sale of the product is made more difficult. The great variety of brick handled by the larger building material concerns makes this problem even more trying when the color and width of the mortar joint is taken into consideration.

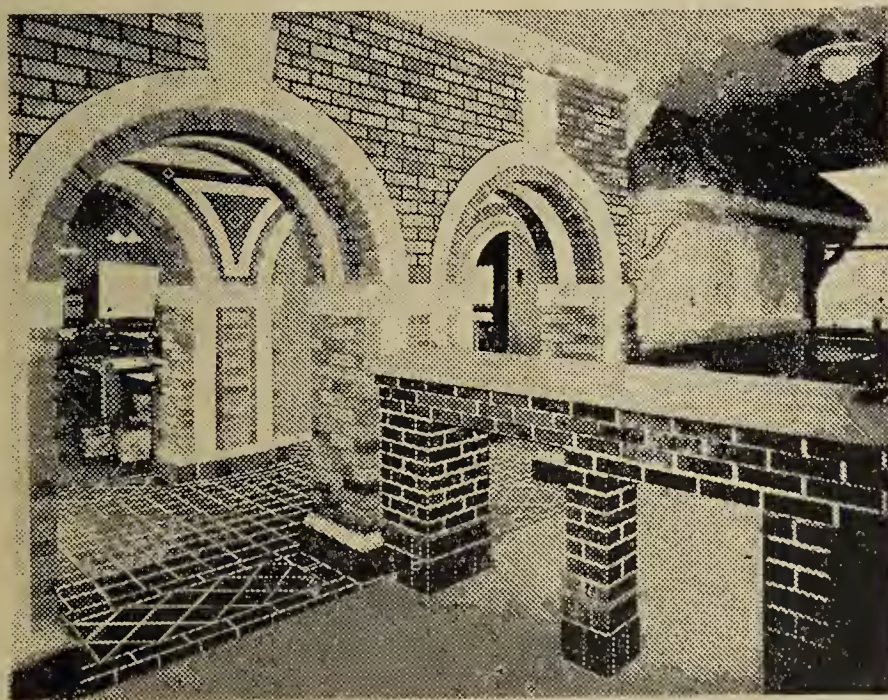
Realizing the great care needed in this connection, due to the fact that it is very hard for the average prospective purchaser to visualize something of which he has little workable knowledge, the Allied Coal and Material Com-

pany, 407 Odd Fellows Building, Indianapolis, one of the live wire brick selling agencies in the state of Indiana, has constructed within a room adjoining their main office, a very comprehensive exhibit, consisting of several very unique units.

Different texture of brick, such as smooth, repressed, vertical scored, chin-chilla and matt finished, are combined with different colored mortars in an almost unlimited variety of wall treatment. In connection with these, suitable and artistically arranged, are also displayed other building materials, such as stucco, cement and tile, demonstrating the different treatments that can be had in the use of same.

As you enter this exhibit through an arched doorway of brick, you find your-

self in a most inviting sun parlor with Dutch Colonial windows and doors, and red quarry tiled flooring, all the colors while greatly different, harmonize in a most appealing fashion. Arched doorways of brick with ivory woodwork trim encircle the glimpse one has of the spaces set aside for desk room, in semi-private offices, in front and to the right; while to



The Unique Display Room of The Allied Coal and Material Company, Indianapolis, Ind.



the left front of the entrance proper you pass through an arched doorway into the main display room. This is more like a large court with a large bay window arrangement on one side, while to the front and the opposite side are well arranged brick paneling. The front wall gives the appearance of the side of a house with a Colonial entrance perfect in every detail.

This room is artistically furnished with old hickory gate leg table and chairs to match in green and ivory, and a silver gazing globe on cement pedestal is one of the interesting features.

Whether you are interested in building a Colonial house or a house of the Renaissance Period, you can find just the combination of brick and mortar in these demonstration walls that will be absolutely correct.

Counseling as to the kind and combination of brick, and door and window treatment, is one of the services given by the salesmen in the correct endeavor to make every purchaser a satisfied customer.

The Allied Coal and Material Company is a consolidation

Their brick sales have increased surprisingly during the history of the company, beginning in 1921, and the 1923 sales will be record breaking if building construction continues as at present, and the plants they represent are able to supply the demands.

The splendid line of brick sold by this company includes the Vine Wove, Persian Tex and Colonels of the Acme Brick Company, of Danville, Ill.; the Ironspot, of the Irondale Clay Brick Company, Columbus, Ohio; Bradford Reds, of the Bradford Brick Company, Bradford, Pa., and Ruff Naps and Matts in autumn shades of the Bloomfield Brick Company, Bloomfield, Ind. Steel Greys to match the Bedford stone are also sold.

BIG PAY FOR BRICK CARRIERS.

One of the most striking and interesting stories coming out of the New York Building situation and pertaining to the Hudson River Brick is one in the Dodge Daily Bulletins telling about carriers earning up to \$25.00 a day while cap-



A Corner of the Display Room Which is Brick from Floor to Ceiling.

of the A. B. Meyer Company and the Indianapolis Mortar and Fuel Company, both formerly keen competitors and real live wires in the building material game. The new company adds strength to both and gives to the builders of the Hoosier capital an avenue for real service in solving the home builders' problems.

From a brickmakers' standpoint, a live wire selling agency, such as the Allied Coal and Material Company, is a splendid asset. Their business policy is conservative, they make no statements they cannot back up and hence can go through with any proposition they enter into.

The service of this company is complete by virtue of the fact that the organization handles materials of all kinds from cement and aggregate for foundation work, though every detail to the beautiful tinted roofing of the Mannville Company. This live wire organization is always on the job first and renders a real service to architects, contractors and builders.

tains of the boats are receiving only \$135.00 a month. This situation developed, according to the story, when the Hudson River brick manufacturers consented to grant the demands of a dollar a thousand. The report continues that somewhere around 100,000 brick have been unloaded in a day by a crew of six men, and that spurred on by the higher wage it is possible for these six men to unload 150,000 brick, which at \$1.00 per would enable them to earn \$25 a day, each. This big earning capacity of the brick handlers moved the boat captains to ask for a raise from \$135 to \$160 a month. And while this was being considered the captains made a counter proposition for \$90 a month and permission to participate with the crews in the unloading of the boats at \$1.00 a thousand brick. This incident is related as one of the things contributing to the high prices of brick delivered on the job in New York, and to that high cost of building operations which has threatened to bring about a collapse of the building boom.



Entrance to Display Room from Main Office.

VALUATIONS OF CLAY PROPERTIES.

By Ellis Lovejoy, E. M.

THE VALUATION of clay properties is widely varying, often largely guesswork, and the results in many instances show the inclination of the party making the valuation.

Frequently the valuator will mentally determine a value, then fix a price per ton to approximate this value, and his report is nicely worked out in acres, tons and rate per ton, to make it more impressive. We have seen per ton valuations ranging from one cent per ton to one dollar for the same kind of material. The minimum rate was obtained by the backward process above mentioned and the maximum rate was to justify watered stock. We have often studied this problem and have had to solve it in some way in many instances.

Recently it was again called to our attention in connection with Federal income returns. The owner charged off depletion at three cents per ton which the Federal adjuster would not allow. A rate of three cents per ton is low enough yet in this connection it all depends upon how the value of the clay land is carried on the books. The cost of the land should not enter into the question, since as we will attempt to show other factors are effective in fixing the value of the clay.

We have adopted a method of valuation which has the advantage of being uniform and applicable to all properties.

We rate common clays and shales at five cents per ton; plastic fire clays and all buff burning clays and shales having the qualities of fire clay, at ten cents per ton; flint fire clays of good quality at from twelve cents to twenty-five cents per ton. Buff burning limey clays are classed as common clays since they have not the properties of a fire clay.

Such fixed rates are open to question yet withal we consider it better to have a fixed rate than to resort to a guessing contest. The objection will be raised that an inferior surface clay such as a pebbly, limey, glacial clay is less valuable than a good paving block or sewer pipe shale and in consequence a sliding scale of rates should be adopted.

We concede this in the flint fire clays since their product is a single one and not dependent upon a local market, but we prefer a fixed rate for the more common clays and shales.

The value of a clay or shale depends upon several factors:

- (1) The quality of the material.
- (2) Its location relative to market, shipping, water, fuel and power.
- (3) Mining conditions.
- (4) Acreage.
- (5) Available capital to develop the material.
- (6) Efficient management of the business.

If we are to have a sliding scale the appraiser must take into consideration the location, etc., and the mining conditions, which widely opens the way for boosting the rate in the interest of promotion schemes. We can not fix the rate on the first item alone because it is clearly evident that a poor but workable clay in a good situation is decidedly more valuable than an excellent shale beyond reach.

The fourth item is a notable factor in the value. It may seem absurd to say that the factory tract of land has a value of five cents per ton of material in the property which may amount to several thousand dollars per acre and the

adjoining land which has the same material similarly located has only the value of farm land, or surface land value.

The factory owner enhanced the value of his land when he invested his capital in the project and took possession of the available market for the product. If the market is not supplied, the owner of the adjoining land can increase its value by investing capital in a manufacturing business.

If the acreage of the factory is limited, the adjoining land increases in value as the need of the factory becomes apparent and when this need is imperative the adjoining land reaches the maximum value. On the other hand only such portion of the factory property as will last the factory an average life has a value of clay land.

Further relative to a sliding scale based on quality, it implies that the better material is more profitable in manufactured ware otherwise the material has no greater value.

If we were to take individual factories of the heavy clay products, or in a comparison of districts, it would be found in many instances that the common bricks were more profitable than the higher grade products, and in this view the clay should be more valuable. If we could segregate the several lines of heavy clay products and determine the profits of each throughout the country, it is doubtful if we would find sufficient difference in the net profits to justify a sliding valuation scale for the material based on its quality.

The higher grade product from the better material costs more to produce but the net profits are no greater and in consequence the material is not more valuable. This is the position we take.

In making an appraisal we fix a period for the life of the factory, 30, 40 or 50 years. One should charge off such a sum each year as will bring the value of the original factory to zero at the end of this period and with this goes a clay depletion charge.

If the clay deposit is limited, the first step is to establish an output which will justify the operation and which the market will absorb. If the clay bed is too limited to justify the factory, then the clay bed has no value. A minimum practical output will determine the life of the factory and we must provide a depletion charge to cover this.

On the other hand if there is excess acreage we should reckon as clay land only such portion as the factory will need during its life. We are frequently confronted with an acreage running into thousands and its value on a tonnage basis would be millions of dollars. A capitalization on this basis would be a greater load than the factory could carry and such a valuation should not be allowed.

This is the engineer's chief problem. In such instances he must consider the whole project together with the average output of factories making a similar product. He must fix an output which the situation will justify, then cut out from the property sufficient acreage to produce this product during the assumed life of the factory, and the remainder of the problem is simple.

This gives ample opportunity for excess valuations of a property as a whole, but not such preposterous valuations as occasionally appear based on a low rate tonnage basis in promotion schemes. In such estimates emphasis is placed on the conservative value per ton, but it is not stated what the acreage will supply the factory for centuries. One not

familiar with the business can easily be deceived by such figures, but a limited factory life, an acreage to cover it, a fixed tonnage rate, permit such excessive valuations only by assuming a preposterous output which is easily detected.

We figure surface clays at 2500 tons per acre-foot and shales and hard clays at 3000 tons per acre-foot. If the operation is underground we reckon a recovery of 50 per cent. or 1500 tons per acre-foot.

Let us assume 500 acres of shale, land value \$100 per acre, shale depth twenty feet, and an estimated factory output of 60,000 face bricks per day, which would be 54,000 tons of shale per year. An acre of the shale will produce 60,000 tons and forty years' operation will work out 2,160,000 tons—a total of 36 acres.

If the factory does not own the land but buys the shale on a royalty basis of five cents per ton, the annual cost for shale will be \$2,700. The factory can afford to pay for the needed acreage such a sum, the interest on which will amount to \$2,700. If we allow 4 percent. for the investment interest (Note—The depletion fund draws interest from the beginning which increases the investment income), $2\frac{1}{2}$ for depletion, $2\frac{1}{2}$ for taxes, etc., and 1 percent. for contingencies, we have 10 percent. and the value of the required land is \$27,000. Add to this the remaining 464 acres at \$100 per acre, gives us a total land value of \$73,400.

Suppose we had figured this land at the **very low** rate of one cent per ton, the value of the land would have been \$300,000.

One may say, why buy the land on such a basis if the shale can be bought as needed day by day for five cents per ton?

Why buy entire acreage when 36 acres is sufficient for the life of the factory? We are not concerned with these questions. We assume that the factory owns the land and that we are called upon to put a value upon it, but aside from this it may be that the only way to get the land is to buy it. Though such may not be the case we consider it good policy to own the land if possible. It eliminates any question in regard to roads, rights of way, fencing out stock, closing gates, dumping ground, etc.

Relative to the Federal income return, if the value of the property is carried on the books on the above basis, namely 36 acres shale land at \$750 per acre and 464 acres of farm land at \$100 per acre, the factory should be allowed to charge off five cents per ton depletion, but if the land is entered at \$100 per acre it would be absurd to charge this off at the rate of \$750 per acre.

PAGE DICKEY.

A recent issue of the "Literary Digest" carried a feature article under the heading "How to Keep Farms From Washing Away." In the "Digest" review there was discussion of the fact that millions of tons of soil particles slip silently away each year down gulleys and through branches and creeks to rivers and so on.

Along with the receipt of this comes a copy of Dickey Clay, the service bulletin of the W. S. Dickey Clay Manufacturing Co., Kansas City, Mo., in which is illustrated and described an easy method of filling waste gulleys by building soil dams and using an underground sewer and protected inlet for carrying away water and incidentally storing a share of it to help increase productiveness of the soil and prevent excessive floods. So there is an answer to the question of how to keep farms from washing away and the clay products people are helping to furnish it.

WILL WE CONTINUE TO BUILD? MUST THERE BE A CESSATION OF BUILDING? CHECK THE HIGH COST IN CONSTRUCTION.

According to an interview recently given by General R. C. Marshall, Jr., General Manager of the Associated Contractors of America, in the New York Times, he declared that to those who see the handwriting on the wall there was no other choice than to attempt consciously to check the rise in building costs before they became prohibitive and destructive.

"Considering the purchasing price of the dollar today, as compared with 1913, building costs are not now prohibitive, but we are menaced by dangerous inflation," he said. According to index figures the cost of building in the spring of 1920, was about fifty-five points higher than it is now. This is on a basis which takes 1913 as representing 100, and which gives us 255 for 1920, and 200 for 1923. In 1920, building material prices were about ninety points higher, with index figures of 100 for 1913, 300 for 1920, and 210 for 1923.

"While building trade wages are at the moment about 75 points higher than in 1913, they are not quite so high as they were in the latter part of 1920, and the first part of 1921; but, since labor efficiency falls off with increasing wage rates, labor production costs are rapidly mounting. The trend is unmistakably toward heavy increase in the total of building costs. The building permits issued in 200 cities in March amounted to \$397,000,000, an increase of about 50 percent over March, 1922, and the volume of building now in progress dwarfs any previous records in the history of the country, being almost 75 percent greater than at any other time prior to 1922.

"We are undertaking this enormous expansion of building with a stationary, if not a diminishing, labor supply, on account of the immigration restriction law, and with the material industries of the country practically at the limit of their productive capacity. There can be only one outcome of such a situation if it is allowed to persist. The cost of materials and labor will present rise to prohibitive levels, and our enormous construction program will collapse with a crash. If history is a good guide, it will take two or three years to recover, in spite of the fact that we are still at least a year's normal building behind the housing requirements of the country.

"It is commonplace to say that all industry is vitally related to construction. If this industry tumbles from an extraordinary peak of activity to a depth of extraordinary depression, the general results will be reflected in all the country's industry and commerce.

"We calculate that if all building projects for speculative selling can be deferred for a few months, and also all other large construction projects not of an emergency nature, we shall effect something of an equilibrium between supply and demand in the construction industry, and will be able to stabilize costs at the present or possibly slightly lower levels.

"If we do this we think that about eighteen months of exceptional prosperity can be counted on in the construction trades, and that from then on the building industry will be able to gradually and comfortably meet the new construction needs of the country. As we see it, the question simply is this: Will the country go easy on new building for two or three months and thereby assure itself a year and a half or more of exceptionally good things, without a terminal explosion resulting in wide-spread ruin and distress; or will it insist on plunging into a mad carnival of rising costs and supernormal building volume which is sure to blow up in a few months and to be followed by two or three years of ruinous prostration?"

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing the Commissioner of Patents, Washington, D. C., and enclosing 10 cents for each patent wanted. In ordering, give patent number only.]

No. 1,456,498. Brick or Tile for Furnace Construction. Charles F. Binns, Alfred, N. Y., patentee.

An article of manufacture comprising a brick for wall construction, said brick having flat top and bottom faces coextensive with the length and breadth of the brick and parallel aligned end faces, and a laterally offset portion intermediate of the end faces.

No. 1,453,819. Combination Apparatus for Drying, Burning and Cooling Brick. Thomas M. Wilson, Greensburg, Pa., patentee.

Apparatus of the character described including a drier; a kiln, said drier having tunnels for bricks to be dried and sub-tunnels; means for directing products of combustion from said kiln into said sub-tunnels; and means for conducting radiated heated air from said kiln directly into said first tunnels of the drier, substantially as described.

No. 1,453,850. Method of and Means for Burning Bricks. Grafton E. Luce, Chicago, Ill., patentee. Patent assigned to Charles A. Brown, Minsdale, Ill.

In a kiln, a stack of green bricks and a foundation of burned bricks, said foundation of burned bricks having a furnace therein and said stack of green bricks having a furnace therein adjacent the furnace in the foundation, said furnaces being connected at intervals through a foraminous wall of burned bricks.

No. 1,454,000. Method of Making Ceramic Ware. Charles W. Saxe, Worcester, Mass., patentee.

A ceramic article consisting of an impervious portion of porcelain integrally united by vitrification with a porous portion of crystalline alumina granules bonded by vitreous clay material.

No. 1,454,165. Brick Machine. Henry W. B. Graham, New London, Ohio, patentee.

The combination with means for filling molds with material for making bricks, of mold return means, mechanism for means co-operating with said inverting and separating mechanism to turn the empty mold right side up and deliver it to said return means.

No. 1,454,826. Method of and Means for Making Bricks. Bernard F. Weber, Chicago, Ill., patentee.

The method of making and assembling bricks which comprises, extruding clay through a die in a parallel-sided stream, assembling slugs of a plurality of brick lengths in parallel relation to each other, and cutting the assembled parallel slugs at right angles into brick lengths.

No. 1,453,468. Refractory Products. Louis P. Kraus, Jr., New York, N. Y., patentee.

The method of treating refractory material consisting in roasting a ground mixture of the material and a combustible at such a clinkering temperature below its melting point as to produce a clinkered material in the form of spongy grains free from crystalline structure.

No. 1,453,381. Machine for Making Tiles. Dominick Alessandro and Rafael Pace, Quincy, Mass., patentees.

The combination with a mold having bottom and side walls, of a pattern adapted to rest upon the bottom wall of the mold, a portion of the pattern being adapted to contact with a side wall to maintain the pattern properly positioned within the mold, and the pattern having a bar spaced from the bottom wall of the mold connecting the pattern to said portion.

No. 1,454,358. System of Kilns. Leroy Weeks, Nevada, Ia., patentee.

A battery of kilns each provided with heating chambers and passageways arranged between the heating chambers and connected together by a subterranean conduit, each of said conduits having an opening in the top wall thereof,

a fan element arranged to be selectively and removably received in any one of the conduits between any pair of kilns, so that heated air from one kiln may be drawn into the next adjacent kiln, a bearing member for said fan element arranged to be seated in any of said openings, and when the kiln is at a predetermined heat the fan element and bearing member may be removed for the purposes stated.

No. 1,456,111. Clay Product and Process of Preparing Same. Edward G. Acheson, New York, N. Y., patentee.

In a process of treating clay bearing materials, the steps comprising subjecting the clay particles, freed from grit, to attrition in presence of a deflocculating agent whereby a portion of the same is transformed into a colloidal state, and then precipitating the colloidal particles in presence of the residual fine material and collecting the product.

No. 1,456,048. Brick. Harry P. Barr, East Orange, N. J., patentee.

Channel brick of the kind described, comprising a connecting body portion having formed thereon three vertically extending wall sections of equal length, each section being cored and producing with said body portion two open channels the exposed faces of the outer wall sections being of standard brick size.

No. 1,455,249. Apparatus for Manufacture of Hollow Tile. William L. Hanley, Jr., Bradford, Pa., patentee.

In a tile plant for the continuous manufacture of hollow cellular tile, the combination with means for forming a continuous cellular tile, provided with longitudinally extending cells, of means for severing the continuous tile into individual tiles, a conveyor having its upper surface movable transversely with respect to the direction of movement of the continuous tile, a drying chamber through which said conveyor passes, and devices for transferring the severed tiles to said conveyor without handling, constructed to place the severed tiles upon said conveyor with their cells disposed horizontally and transversely to the direction of travel of said conveyor.

No. 1,456,975. Crate for Loading and Unloading Brick. Hollister G. Fergus, Chicago, Ill., patentee.

A transfer crate of the character described, comprising a rectangular box having vertical side walls and vertical end walls extending below the lower edges of said side walls, angle-iron strips riveted to the extensions of said end walls, a pair of rods disposed parallel with and below the lower edges of said side walls on the outer sides of the latter and at their ends journaled in said angle-iron strips, and a flat bottom plate movable edge-wise to and from a position of rest on said rods.

Trade-Marks and Designs Patented.

No. 167,576. Garteraig Fire Clay Co., Glasgow, Scotland. Trade-mark registered for brick and tile drainpipes.

No. 167,425. F. Graham Williams Brick Co., Inc., Atlanta, Ga. Trade-mark registered for bricks.

No. 167,519. Pacific Clay Products, Inc., Los Angeles, Cal. Trade-mark registered for construction materials.

No. 167,520. Pacific Clay Products, Inc., Los Angeles, Cal. Trade-mark registered for vitrified sewer pipe, tile conduit pipe, etc.

No. 167,469. Crescent Refractories Co., Curwensville, Pa. Trade-mark registered for fire bricks and tile.

No. 173,486. A. P. Green Fire Brick Co., Mexico, Mo. Trade mark registered for "D. P." for fire brick, fire clay and tile.

No. 173,486. A. P. Green Fire Brick Co., Mexico, Mo. Trade-mark registered for "H. M." for fire brick, fire clay and tile.

No. 173,488. A. P. Green Fire Brick Co., Mexico, Mo. Trade-mark registered for name "Mizzou" for fire brick, fire clay and tile.

No. 168,050. Acme Brick Co., Danville, Ill. Trade-mark registered for brick and tile.

No. 168,512. A. P. Green Fire Brick Co., Mexico, Mo. Trade-mark registered for name "Quik-Pach" for brick-patching materials.

No. 170,415. The Vitrefax Co., Inc., Los Angeles, Cal. Trade-mark registered for name "Diamel" for refractory bricks, brick and ceramic kilns, etc.

No. 170,417. The Vitrefax Co., Inc., Los Angeles, Cal. Trade-mark registered for name "Argon" for refractory lining for brick and refractory kilns, furnaces, etc.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Five. MATERIAL AND SUPPLY RECORDS.

THE CLAYWORKER has a very simple material problem. His material consists of clay and coal. Although recording this material is an easy task, it has its disadvantages in the fact that the clayworker cannot help himself by reducing the supply at times of low demand. Consequently the only resource he has for saving money is to keep the coal expense and the other supplies connected with clayworking as low as possible. These records must always be written just as it is necessary to write all cash transactions in the cash book.

It is very difficult, however, to convince the average clayman that written records are an absolute necessity. They are always time-savers since they standardize the routine and enable the men to do the same thing in the same way without delay. Consequently, a requisition for supplies withdrawn from the store room should always be written. The proper origin of this requisition will be discussed later.

If the plant is large enough, which means a large enough store room, a storekeeper is needed on the job at all times. He is the only man who should be entrusted with taking supplies out of the store room. This man could keep all records and hand out tools and supplies himself, so that he alone is responsible for everything he handles. If the plant cannot support a storekeeper, the foreman must do this work, although there are serious objections in the way of burdening the foreman with this clerical work. He should be free to supervise the activities of the men as much as possible.

The Form of the Requisition.

The heading should contain the name "Requisition," department, date and order number. The order number used is the one that applies to a special lot of ware going through the plant when the supplies or material was drawn from the store room or to be used for this lot only. But when the supplies are for general use in the plant, an expense order number must be given on the requisition which charges the expense to the particular department that is to use it.

The body should contain columns headed:

1. Quantity. This provides for the number of items of each kind of material used.
2. Unit. This contains the information as to the basis on which this material is measured or weighed.
3. Description. This column records the kind or type as shovel, picks, etc.
4. Size. This is provided for those materials whose descriptions do not indicate the size.
5. Price and Amount. These columns are self explanatory.

At the bottom of the slip a space is provided for the signature of the man who issued the requisition. It will be noticed that in the above requisition provision is made for the price and amount of the supplies consumed. The purpose of this is to charge the supplies with their actual cost as nearly as possible. If the price is not put on the requisition, it not only necessitates referring back to other records, but it means averaging up expenses which should be actual at all

times. It is not necessary to extend the full amount of the supplies' cost at the time the requisition is issued. All that is needed is to put the price of the material on the slip. When it comes back from the foreman to be filed in the expense file, the total amount may be extended.

Broken parts that are replaced from the store room should be credited as scrap. In any industry that involves such large operation as clayworking does, scrap forms a very considerable item and it is necessary to account for it with a great deal of accuracy.

The Stock Records.

It is a sound business policy to keep the investment in supplies and other operating expenses down to a minimum. However, it is not wise to permit the plant to run out of supplies which actually cause a hold-up in production. Therefore, it is necessary to have a store room. The store room acts as an expansion joint between the purchase of supplies and the plant operation. This joint prevents work from being stopped because of lack of the necessary supplies and enables the operators to take advantage of the market in case of coal. If clayworkers depended on purchasing direct as the need for their supplies arises, they would find themselves hindered and encumbered by exasperating delays in delivery and by errors and mistakes which might prove very costly at a critical moment.

The question of how large or how small a store room should be cannot be decided arbitrarily. Every one must use his own judgment in this matter. Of course the store room has to be as large as the biggest supply of stock on hand at any one time. The store room permits the operator to put his supplies under lock and key and prevents waste, carelessness, and theft.

There are other reasons why a store room is a necessity. Stores represent cash. A worker who would take dollar bills cut them in half, throw them around, leave them in out of the way places would very soon lose his job and be reported as insane besides. But no one reports a worker as insane for discarding equipment that is still useful or for wasting material or supplies when a little care would effect great savings.

In the preceding paragraphs we discussed the methods by which the consumption of supplies can be determined. One way is to put a card on the rack or bin where the tools are stored and have each worker make the deductions of the quantity he is taking away.

There are several objections to this method. The workers dislike any clerical work and are sure to neglect it unless carefully watched. Besides, a worker tends to scrawl and usually his hands are dirty, so that the card soon becomes illegible, and its value is destroyed. This would be no gain over no record at all. It would simply mean additional work. But it is necessary to identify and account for the supplies and a record of one type or another must be devised.

Inventory must be taken currently and accurately at some

time or another. It gives a complete knowledge of the supplies on hand. It automatically records the consumption of supplies. It furnishes a record of change in prices. It makes bank and income tax statements an easy accomplishment.

If there is a storekeeper, the maintaining of a perpetual inventory system is a very simple matter. He gets the record of the consumption for the material charge slips. This takes out of the hands of the worker the matter of keeping stock records and at the same time provides the proper charge to each expense or production order.

This form should be designed as follows:

Heading:

Description	Size	Unit	Location	Maximum Limit	
					Minimum Limit

Body:

1. Order:
 - a. Date
 - b. Order number
 - c. Quantity
 - d. Total
2. Receipts:
 - a. Date
 - b. Order number
 - c. Quantity
3. Issued:
 - a. Date
 - b. Order number
 - c. Quantity
4. Balance on hand:
 - a. Quantity
 - b. Current price
 - c. Amount

In explanation of the above, the space following the word description is devoted to the particular kind or type of material deposited in one place or one bin. Size, unit and location are self explanatory. In deciding the quantity of the material or supplies to be carried, it is better to establish a maximum and minimum limit. The minimum limit repre-

sents the least quantity of supplies it is safe to carry. The maximum limit represents the largest quantity of material that the operator is willing to carry at any one time. The balance on hand should range somewhere between these two limits.

The importance of maintaining the established quantity of supplies can be overemphasized. These limits are determined by experience, and to ignore them even for a little while means taking an unnecessary and unbusinesslike risk. They insure the work being done properly and efficiently, and they prevent too much money from being tied up in material and supplies. They serve as a measure of the efficiency of the plant and help to determine the rate at which the supplies are consumed. If the supplies are not being consumed at a normal rate, it means that production is not going forward at a normal rate.

The minimum limit marks the danger line when the stock gets low. The maximum limit is established to provide for a rising market, when the operator has reasonable assurance of a given volume of work and wishes to take advantage of low prices. At times it is not always convenient to buy small quantities, purchase in larger quantities usually bring larger discount and prompter service.

The column headed "Order" is provided as a reminder for purchase orders that have been placed but not yet delivered. This is especially useful when work is done on a large scale and it is customary to place a time limit on the work to be done with a penalty for falling short and a bonus for doing the work within the required time. In this case it is absolutely essential that the supplies be on hand when they are ordered and at the same time it is impractical to carry too large a stock simply to provide for emergencies. The minimum and maximum limits anticipate all emergencies.

The date column is provided for order follow-ups and the order number for a proper charge to each individual lot or department. The receipt column is a cumulative record of the quantity of the material or supplies delivered to the plant. The date establishes the time after the order was placed that it took to deliver it. The issued column records

STORES REQUISITION						
DEPARTMENT _____			DATE _____		ORD NO _____	
ISSUED BY _____			FOREMAN'S O.K. _____			
QUANTITY	UNIT	SIZE	DESCRIPTION	PRICE	AMOUNT	

Fig. 1. Made Out in Duplicate—One Copy for Record and One for Receipt.

PERPETUAL INVENTORY															
KIND _____				MINIMUM _____				MAXIMUM _____							
UNIT _____				SIZE _____				LOCATION _____							
ORDERED				RECEIVED			ISSUED			BALANCE			BALANCE		
DATE	ORD NO	QUAN.	TOTAL	DATE	ORD NO	TOTAL	DATE	ORD NO	TOTAL	QUAN.	PRICE	AMOUNT	QUAN.	PRICE	AMOUNT

Fig. 2. Perpetual Inventory Printed on Ledger Paper and Punched for 3-Ring Binder.

the quantity of material consumed or returned to stock. This is also a cumulative record. The difference between the issue and the receipt is the balance on hand. The price and amount column are self explanatory.

The function of the perpetual stock record is to provide the plant with an accurate record of the quantity of supplies on hand without necessitating an actual count of the stock itself. This method has several distinct advantages:

1. It permits intelligent purchase of supplies. A knowledge of what is needed and what is on hand makes it possible to take advantage of market conditions.
2. It permits planning the work of the plant with great saving of time and money.
3. It makes possible the determination of the cost of production without resorting to an actual physical inventory.
4. It permits a quick statement of the assets for the purpose of borrowing money from the bank.
5. In case of fire, the insurance company is much more likely to credit claims for stock destroyed, if properly kept stock records are brought forward to support the claim.
6. It reduces waste and theft by charging the individuals with the material taken out.

(To be continued.)

GENERAL BRICK CASE DECISION.

IT SEEMS THAT for the present at least the Interstate Commerce Commission is sticking to its original ruling in what is known as General Brick Case No. 10733, giving a certain common brick a rate of not exceeding 80 percent of the uniform brick rate to the same point. The ruling which is now booked to become effective August 15, is:

"That, except exclusively in trunk-line territory, the rates for the interstate transportation, for distances not in excess of 150 miles, of common brick, in carloads, viz., Brick, Common, not hollow, made from low grade clay or shale, loaded to the marked capacity of the car, and when not braced, wedged or packed for protection against rubbing, breaking or chipping, not including any grades, (firsts, seconds, thirds or culls) of enameled, face, front, paving, fire or refractory brick, shall not exceed 80 percent of the corresponding rates contemporaneously maintained on articles in the uniform brick list and to the same points."

This case has been the subject of difference of opinion and considerable discussion. And on the whole it seems as if the majority of those in the industry feel that there should be one uniform rate for brick, and made to include common and face brick and all those listed in the general brick list. Also it is said that the ruling really defeats itself in that it is not practical to load cars to capacity with common brick dumped loosely in the car.

Anyway, whatever the opinions about it, it seems that the ruling quoted above is to stand and become effective August 15.

TILE COMPANY RESUMES OPERATIONS

The Empire Floor & Wall Tile Co., Middlesex Avenue, Metuchen, N. J., has resumed operations at its plant, following an idle period for some time past. The company has recently been reorganized and has plans for extensive production of fine floor and wall tiling. Repairs and improvements are being made to the equipment. Employment will be given to about 40 men for initial operations and it is purposed to enlarge this working force in the near future. Roy Schweiker has been appointed plant superintendent.

NEW JERSEY CLAYWORKERS TO HOLD MEETING

The regular summer meeting of the New Jersey Clayworkers' Association and Eastern Section of the American Ceramic Society will be held at the Country Club, Trenton, on June 29. There will be an afternoon session only, preceded by a luncheon on the veranda of the club house at 1:00 o'clock. The meeting will be given over to one or more important technical papers, and a discussion of pertinent matters in the industry. A large attendance is anticipated.

AN OLD FRIEND IN A NEW ACTIVITY.

AN INTERESTING and handsomely illustrated leaflet under the title of "Nokol News," of recent issue announces that J. Parker B. Fiske, known to every brickmaker in the land, as he was for a number of years at the Fiske Brick Co., Inc., New York, and the originator of Tapestry brick, is now leading in the organization of the Nokol salesmen. Parker is credited with having a truly wonderful and efficient organization, having produced more retail sales than any other of the Nokol dealers. We are glad to record his success. It is just what we expect of Parker.

NEW JERSEY CLAY MINERS HOLD MEETING.

THE REGULAR SUMMER meeting of the New Jersey Clay Miners' and Manufacturers' Association, Perth Amboy, was held at the East Jersey Club in that city, Thursday evening, May 24, with a large attendance of members and guests. The gathering took the form of a testimonial event to L. H. McHose, head of the McHose Clay Co., who recently retired as president of the association after a continuous service of thirteen years, or since the inception of the organization. To him it was an entire surprise and he showed his deep appreciation of the honor accorded.

After a fine dinner, with August Staudt, head of the Perth Amboy Tile Works and now president of the association, presiding, Frank Valentine of the M. D. Valentine & Brother Co., Woodbridge, made a motion that the affair be recorded on the books of the association as having been given in honor of Mr. McHose. This was seconded by John Pfeiffer of the Henry Maurer & Son Co., Maurer, N. J., and passed by a rising vote. Mr. Pfeiffer then presented Mr. McHose with a handsome silver loving cup as an expression of regard from the members of the association in recognition of his able leadership through the years noted and the ensuing accomplishments.

Mr. McHose accepted the gift with a few well-chosen words and sketched briefly the history of the association since its organization. He spoke of the high tribute that the loving cup conveyed and said that it be treasured in the years to come. Following, President Staudt presented Mr. McHose with a set of book-racks made from clay taken from the McHose property.

The balance of the evening was given over to a round of good fellowship and social pleasure. Before the adjournment, a committee was appointed to arrange for a summer outing to Doylestown, Pa.

For the quick setting of cement mixtures a new element seems to have been brought forward by the Mellon institute called "cal." The report states that it is made by mixing 100 parts hydrated lime, 55 parts commercial calcium chloride, and 50 parts water. It is said that an eight per cent. mixture of this in concrete will materially hasten the time of setting.



HISTORICAL SKETCH OF CLAY SEWER PIPE.

CLAY PIPE HAS always been contemporaneous with civilization. When a people advance from the stage of living in caves, and commence to build their huts in a community group, it is not long before they are confronted with problems of sanitation; the disposal of wastes of all kinds, and the distribution of water for domestic use. In the swift course of time, many nations have arisen from these communities of huts to great heights of culture and civilization, only to be crushed and to decay under the relentless forces of more powerful nations and of nature. In such a civilization as this, ancient Babylon, is found the earliest recorded use of clay pipe.

The clay pipe unearthed at Babylon is in most cases unharmed by the disintegrating action of the elements. It was made by hand on the potter's wheel, as was most clay pipe until about 1875. In Babylon, the palaces had rather extensive systems of drainage, while the smaller houses used methods of disposal similar in nature to the cess-pools, until recently very extensively used in this country. Shafts were dug into the sand as deep as fourteen meters in some places, and vertical drains were laid of cylindrical terra cotta sections. These were punctured at intervals, and the bottom left open to permit the liquid waste matter to seep out into the surrounding sand.

In an article by Edgar James Banks, he says: "In the Bismya temple we uncovered a horizontal drain of tiles each of which was about a meter long and fifteen centimeters in diameter, and not unlike in shape those in use at the present time. It conducted the rainwater from the platform to one of the vertical drains. One tile was so well constructed that for a long time it served as a chimney for our house until my Turkish overseer suggested that its dark, smoked end project from the battlements of the house to convince the Arabs that we were well fortified; thus it served as a gun until the close of the excavation."

The Archaic Arch at Nippur, discovered in 1894, by Dr. Haynes, is probably the first example of the use of the arch principle in drainage. According to our foremost archeologists, this drain was constructed during the reign of Naromsin, about 3750 B. C. The main sections of the arch are composed of unbaked clay brick with terra cotta pipe under-drains and over-drains.

In James Baikie's "The Sea Kings of Crete," we find that

the ancient Cretans were also aware of the value of good drainage. The palace of Knossus (about 1400 B. C.) had a number of well constructed drains of terra cotta pipe which are in a good state of preservation today.

The Greeks seem to have expended all of their energy in the development of art. They made beautiful clay vases and other ornaments of clay, but neglected sanitation, although the leading men strongly urged them to take up this matter.

It is in Rome about the time of Christ, that we find the last of the ancient highly developed systems of sanitation. The Romans used clay pipe extensively for their house connections. At the fall of the Roman Empire, all interest in sanitary problems was lost and it was not until about eighteen centuries later that we find the problem of sanitation taken up again. At the beginning of the nineteenth century, London and Paris began to take up the problem of disposing of their waste materials in a sanitary manner. At first all of the house drains emptied into the gutter, making matters worse, if anything, than before. By 1847, however, trunk line sewers had been built underground in both cities, and waste matter from the houses was diverted into them.

At about this same time, the first clay pipe was made in this country, being the hand-made pipe turned on a potter's wheel at Zalia, W. Va.

The first really big strides in the development of the sewer pipe industry in this country took place between 1865 and 1870. From all available data, this development occurred almost simultaneously in two different sections of Ohio; the river district around Toronto, and the Akron district. David E. Hill and C. J. Merrill of Hill, Foster & Company, were the pioneers in the Akron district, while in the Toronto district, the Freeman Fire Clay Company, and the firm of Carlyle & McFadden were the first to take up the manufacture of sewer pipe. The clay for the sewer pipe at this time was pugged by horse-power. The presses at this time were screw presses similar to the ones used in a cider press. Boys of the community were used as motive power to operate the press. They walked around on a platform pushing a lever which turned the screw, the pipe being pressed out at the bottom. The straight body of the pipe was made first, the socket being stuck on by hand.

The steam press was put into use in this country about 1870. Several steam presses were tried out in England previous to this, but it remained for the American interests to develop a practical press that would work satisfactorily.

Again it is not clear that either of the two pioneer districts was the first to use the steam press, for it appeared in both sections in the same year. By 1876, the steam press was rather generally used in all the sewer pipe plants. Though numerous additions to the steam press since that time have brought the pipe up to its present state of perfection, the principle is essentially the same.

One of the most important developments in the history of sewer pipe took place about the middle of the seventeenth century. This was the discovery of the salt-glazing process. The Department of Commerce in its Misc. Series No. 21, gives the German potters credit for the discovery. Other authorities state that England is the birthplace of the salt-glazing process. One of these English authorities gives an interesting anecdote of the discovery. An old English potter was burning a kiln of pipe and had just reached the vitrifying stage when his coal gave out. He broke up some old boxes and barrels which he used as fuel. When the pipe was taken out, it was found covered with a glossy coating which was a true salt glaze. The pipe attracted considerable attention when it was marketed, and upon investigation, it was found that the boxes and barrels had contained salt-pork, and the wood had taken up a large amount of the salt brine. From this beginning was worked out the theory of salt glazing which today aids in making vitrified clay products impervious to moisture and to the action of acids and alkalis. This is the story of the development of vitrified salt-glazed sewer pipe. The modern method of its manufacture will be taken up subsequently.

R. L. J.

SEWER BRICK SPECIFICATIONS.

Those who have been at work on the matter of definite specifications for sewer brick which may be officially listed with the American Society for Testing Materials have been facing the difficulty of lack of interest and information on the part of city engineers on this subject. Very few responses have been made to letters of inquiries pertaining to specifications drafted, and these were not encouraging. It indicates lack of interest and information and also an inclination to let the brick people work out this problem for themselves without very active help from city engineers as a whole.

CHARLES A. BLOOMFIELD HONORED BY NEW JERSEY CLAYWORKERS.

At a recent meeting of the Rutgers College Ceramic Club, Rutgers College and State University of New Jersey, New Brunswick, formed of students in the ceramic classes at the institution, a life-size bust portrait of Charles A. Bloomfield, Metuchen, N. J., was hung on the wall of the assembly room of the Ceramics Building, having been presented by members of the Executive Committee of the New Jersey Clayworkers' Association. A brass inscription plate sets forth the following, explaining in a few words the significance of the presentation:

Charles A. Bloomfield.

In recognition of his services in founding and fostering the Ceramics Department at Rutgers College, this portrait is presented to the Department by members of the Executive Committee of the New Jersey Clayworkers' Association on the occasion of his seventy-fourth birthday, February 25, 1923.

The address of presentation was made by August Staudt, head of the Perth Amboy Tile Works, Perth Amboy, N. J., while other comments were made by R. H. Minton of the

General Ceramics Co., Metuchen, and Professor George H. Brown, director, Department of Ceramics at Rutgers. The initial presentation of the portrait took place several months previous, on the occasion of Mr. Bloomfield's birthday anniversary, at his residence.

ENGLISH CERAMIC TRANSACTIONS.

Among the publications coming to hand is the transactions of the English Ceramic Society including the refractory material section. It is published by the Ceramic Society, Stoke-On-Trent, England, and for sale to non-members at 45c per volume.

The part one volume of the publication carries the following subject matter:

Some Experiences with the Door Mill in Grinding Quartz and Flint for Pottery Purposes.

Continuous Grinding.

The Danish Ceramic Industry.

A Visit to the Potteries of Norway, Sweden and Denmark.

The Refractory Materials of the London Basin.

The Gypsum Industry.

Atmospheric Conditions in Potters' Shops and the Efficiency of Various Types of Drying Stoves.

A Study of Factors Involved in Slip Casting.

Notes on the Crystalline Structure of some China Clays Examined by the X-ray Powder Method.

ETHICS.

In the matter of ethics or business principles, E. W. McCullough of the Fabricated Production Department Chamber of Commerce, U. S. A., gives out a special bulletin pending the final report of the Committee on Ethics, containing copies of various codes sent in by trade secretaries as pertaining to their organization efforts. These include many and diversified interests, and among them one that is brief and to the point is a code of ethics of the American Face Brick Association which reads as follows:

"Take no action that infringes upon the laws of your country.

"Never accept a larger order than can be reasonably delivered within the terms of agreement.

"Do not unjustly discredit a competitor's product, or act in any other way detrimental to the general interests of our business. Omit knocking.

"Avoid scrupulously all overstatements or misrepresentations of any kind in your own behalf, either in advertising, or in personal salesmanship.

"Refrain from all further solicitation after a competitor has secured either an adoption or an order, to be considered such when formally expressed in writing.

"Do not renew selling efforts in case of dispute regarding time or quality or deliveries, except with the knowledge of the original consignor.

"Discountenance the tendency to extravagant selling methods.

"Form selling connection only with efficient and responsible selling representatives whose loyalty to the industry is unquestioned, and bear in mind that it costs more to sell to the retail trade than to the wholesale dealer.

"Make it a fundamental obligation to provide your dealers and salesmen with this code of practice, and seek to imbue them fully with its spirit.

"Hold firmly the ideal of service to your customers, whether architect, contractor, or owner, and of co-operation with your competitors; be as fair to others as you are to yourself; and practice what you preach."

A BLUE GRASS BRICK PLANT.

A Pioneer Brick Manufacturer of Kentucky and His Modernized Plant.

AT NICHOLASVILLE, KY., in the heart of the bluegrass, a little more than a dozen miles out from Lexington, is a real bluegrass brick plant which makes a splendid brick from the clay which overlays the famous phosphatic limestone that makes this region famous for its bluegrass and for its soil. This is the plant of A. H. Schneider & Sons, which for a number of years was a hand yard, but in 1921 was converted into a machine plant and made its first real run as a soft mud machine plant in 1922.

A. H. Schneider, father of the family, and the pioneer in the business, has been a brickmaker practically all his life. He started in making brick in a small yard in Shelbyville, Ind., back in 1870, and for the next ten or fifteen years was making brick at various points in Indiana. He came into Kentucky in 1894, first at Falmouth and Vanceburg, then to Owenton for about eight years, coming to Nicholasville in 1904, where he set up a brick yard back of where his present home stands, where he operated for many years. This is in the eastern part of Nicholasville. In 1921 he and the

middle of October, and during most of this season their brick will dry enough in the course of a week to be set in the kilns.

They have two square kilns, 30x70 feet, which hold 400,000 brick by setting to a height of 34 courses. They use a boiler furnace type grate bar, and a fairly regulation boiler fire box installation with some interesting features about them that they developed themselves. The process of burning consists in water smoking with wood for about three and a half days, then turning to coal with which they continue to fire and raises heat gradually through about one and a half days, following this with about two and a half days of steady burning, making seven to eight days all told, after which they seal up and cool down for about seven days. They figure that their burning temperature ranges from 2,000 to 2,200 and their settling is from seven to eight inches in a 34-course kiln. This is an unusually high temperature for the clays of either Kentucky or southern Indiana, as most of the clays and shales, too, burn at temperatures ranging from 1,600 up to 1,900. Also it is a smaller amount of settle than the average because in most of the territory a 36-course kiln will settle ten or twelve inches. This is what demonstrates some of the peculiarities of their clay. These peculiarities, however, seem to add to the virtue and qualities of the brick,



Panoramic View of the Brick Plant of A. H. Schneider & Sons, Nicholasville, Ky.

boys got busy and built a new machine plant just outside of Nicholasville on the north.

The clay opening here ranges down to a depth of 7 or 8 feet, with a buff red clay showing some iron streaks or spots which manifests itself in the brick coloring when they are burned to a high temperature. The clay, both in appearance and in its working, is a little bit peculiar and different from the usual run of Kentucky and southern Indiana clay, but there was no analysis available to check the exact difference. It seems that it is a little denser and harder than most of the Kentucky clays, takes an unusually high temperature to burn, and the shrinkage is rather light.

The new plant, which was equipped in the fall of 1921 and made its first real run during the season of 1922, consists of a Potts' soft mud machine with 60,000 capacity, and a granulator and disintegrator, for the work of brickmaking proper. The clay is garnered by hand with trucks which are pulled up into the plant on an incline track by hoist rope. Then in addition to this equipment for garnering and working up the clay, there is a string of sheds for drying, and two kilns for burning.

The brick are usually air dried 5 to 7 days, the exact time depending some upon the weather conditions, of course. The usual working season with them is from April to the

both in the matter of color and strength and uniformity. The average product is a standard red brick, but around the arches and where the temperature is high enough to fuse the iron in the clay a darker shade enters into the red until there is developed some interesting face features of dark brick and if iron spots and speckles, which plainly have interesting possibilities of architectural featuring in face work.

The output of this new bluegrass plant during the past season was about a million and a quarter brick, and a kiln that had just been opened when the plant was visited in the late fall showed a thoroughness of burning and a variation in iron shadings in the red brick colors that will make a strong appeal to many an architect or face brick salesman looking for interesting features. Incidentally, too, they had letters from customers to whom they had shipped brick in the eastern part of the state who spoke highly enough of them to make the Schneiders feel that they have a good product, as well as a new plant, and can push their work with confidence in the future.

Associated with A. H. Schneider, who is the pioneer and president of the company, are his two sons, F. O. Schneider as vice-president, and A. H. Schneider as secretary-treasurer. This makes up the firm of A. H. Schneider & Sons, all of whom carry on and do their part not only in the conduct of

their own plant but in co-operation with others in association work, they being members both of the Kentucky Clay Products Association and of the Common Brick Manufacturers' Association. Mr. A. H. Schneider has been a member and regular attendant at all the Kentucky meetings and is at this writing vice-president of the Kentucky Clay Products Association.

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.



HIS STATE, LIKE HER sister state, New York, has troubles in the building industry, which, while not as gigantic as some that appear across the river, have the effect of producing great uncertainty.

While there have been no strikes, lockouts or walkouts reported of any great amount, the main feature is the scarcity of labor to do the work that is at present

tion where it has and still is needed quite urgently. Of course, where laborers' demands have to be met and with these costs constantly moving upward, there will always exist that uncertainty about the future.

There seems to be a sufficient supply of this basic commodity in the yards and in the dealers' hands, with inquiries quite numerous, but not so numerous as to be burdensome. Deliveries are reported as being quick, with the quantities running about as in normal times and nothing of unusual merit to be noted.

Some dealers report trouble in getting face brick, especially the kind and type that is made out of the state. The railroad carriers are very slow on deliveries, while in some cases they are really quite punctual.

Prices on commons remain the same throughout the State generally, with but little fluctuation to be noted—probably a dollar or two up or the same amount down will be seen in some centers, but this is purely a local condition.



A. H. Schneider in the Clay Pit.



A Glimpse of Kiln and Stock Pile.



Tramway Leading from Clay Pit to Machine House.



A Cooling Kiln, at Plant of Schneider & Sons, Nicholasville, Ky.

in hand or contemplated. There seems to be a good supply of work, both on the tables and that has already passed through the estimators' hands. Speculative building is right up at the front, with more to come forward before the end of the summer.

Reports from the speculative building field show an unusual amount of activity. For the first time in many months the operations at present under way are working on schedule, and are fully manned in all the important trades. Due to the delays in the early part of the year, the parts or parcels due for completion by October 1, can not possibly be completed before the first of next year. This state has had the same drawbacks as are to be seen everywhere.

The inflation of building material costs and the demands of the laboring classes have done much to retard construc-

Face brick remain in fair demand, even though the conditions as to the future show decidedly unfavorable aspects. The reds seem to be the colors that are wanted and the prices are unchanged from last month. Speaking generally, there is no alteration in price anticipated by those in a position to be in one the "know." There seems to be numerous inquiries in vogue and prevalent among a great many dealers, but the quantities are not staggering in size. There seems to be sufficient in stock throughout the state to care for current needs, with many dealers in touch direct with the manufacturers.

Hollow tile is in demand, but this is not of such proportions as to cause an undue alarm. The sizes wanted by most builders are small and are to be easily found in dealers' stocks. The plants for manufacturing this commodity are

going ahead as fast as is possible, and are finding a ready market for the wanted sizes. The prices remain approximately the same, with but little fluctuation to be seen or noted in or about most centers.

BURTON.

THE CLAY BED OF CENTRAL CALIFORNIA.

RUNNING THROUGH FOUR or five counties from Lincoln and the neighborhood of Marysville on the north to Valley Springs on the south, along the foothills of the Sierras, is the exposure of an almost inexhaustible stratum of clay. Much is lightly covered, but enough is exposed to supply the wants of central California for generations to come. In this deposit in different places is found almost every grade of clay needed in the ceramic arts. There is the finest of clay for fire brick, pressed brick, architectural terra cotta, sewer pipe, porcelain wearing glass, building tiles and high-grade pottery. From the white clay sand window glass is also made. The plant at Antioch on Suisun Bay, an arm of San Francisco Bay, has shipped thousands of tons from Carbondale. A summary by C. A. Logan, mining engineer of the California State Mining Bureau, shows that the clay runs from a snow white to a strong mottled red. The white clay is nearly one-half quartz, giving a low shrinkage and fusibility at 3,000 degrees, strong points for a good fire clay.

John T. Roberts, president of the Stockton Fire Brick Company, calls attention to the immensity of the deposits, and to the fact that only a few small holes have been dug in this clay. The two main elements of difficulty, he points out, are first the development of a dense population to supply the proper market, and secondly the matter of transportation. While there are some wonderful little agricultural pockets in this section, there is not enough of other industry in this region to tempt the building of numerous railroads. So development follows the few streaks of iron. Fortunately, the cost of mining and transportation are relatively low; so extensive development has taken place at Somerville, Carbondale, Lincoln and Ione, points of convenient transportation. Sixteen manufacturing companies are using clay from the Ione district alone. Most of this clay is mined by a few companies and shipped to the users.

The Newman Clay Company furnishes white clay for pottery. They mine their own pits and ship on contract.

Bacon and Bacon are extensive miners and operate some of their own pits and some on lease or contract for others. N. Clark & Sons of Alameda own 200 acres near Carbondale, which is mined for them by Bacon and Bacon.

The Lincoln Clay Products Company ship from Lincoln all over the coast from Washington to Los Angeles.

The Ione Fire Brick Company at Ione mine their own clay and turn out some 20,000 bricks per day.

The Stockton Fire Brick Company mine their own clay at Carbondale. Their plant is at Stockton, where they employ a hundred men, making about 90% of the fire brick used in this territory.

At Valley Springs are a number of pits, and the California Pottery Company have opened a pit there, adding another to their sources of supply.

In the Ione district the Livermore Pressed Brick Company have also opened another pit to supply their ever growing demand.

Outside of these are a number of available properties with fine materials yet untouched. There is the McKissick Cattle Company, owning the Arroyo Seco Rancho of 33,000 acres in the Ione-Carbondale belt, with mining rights covering several

thousand acres. Much of this land contains fine undeveloped clay deposits. The W. W. Carlisle property, near Ione, contains a deposit of fine white clay and sand still undeveloped.

Specialization.

Mr. Roberts is much of a believer in the value of specialization in clay products as well as in other lines. The more completely a company specializes, he says, the more easily they can either overmatch competitors in quality or underbid them in cost of production sufficiently to get the cream of the market. To this he attributes largely the success of the Stockton Fire Brick Company. They have built a custom that is steady in season and out, and year in and year out, so that their products are found in almost every plant of importance or building of size on the Pacific coast. He cites as an instance of specializing success, that of the Livermore Pressed Brick Company with their hollow tile product, and that of the Gladding McBean Company with their terra cotta. While these companies produce other excellent products, the success that attracts most attention is in these lines where they have specialized most intensively. The Gladding McBean Company is now able to produce as fine terra cotta as is made; and are shipping to the Orient and to some extent to all parts of the world. They keep a force of highly paid artists doing their modeling work, and are prepared to fill specialty orders of every description. Their works at Lincoln are an interesting study. They have here a couple of million of dollars invested, and keep several steam shovels always at work supplying clay for their own use.

As to the prospects ahead, Mr. Roberts believes that all augurs well for the clay industries. While the West has hitherto built of wood because wood was cheap, that day is forever past, and clay is coming to its own.

SUNSET.

THE DICKEY BULLETIN.

ONE OF THE interesting house organ publications coming this way is "Dickey Clay," a monthly service bulletin issued by the W. S. Dickey Clay Manufacturing Co., Kansas City, producers of sewer pipe, flue linings and caps, septic tanks, etc. The bulletin is devoted to the constructive co-operation in the field of clay products and in their distribution through dealers. A feature of the bulletin in hand is a tabulated explanation of how purchasers can make their money earn big interest by taking advantage of the cash discounts. There is a tabulation of figures showing the rates of interest earned by taking advantage of discounts in which the interest earnings for prompt pay run as high as 90 percent. per annum where one takes advantage of the discount of 5 percent. in 10 days.

POWDERED COAL.

THE PREPARATION, transportation and combustion of powdered coal is the subject of a special pamphlet publication of the Bureau of Mines, by John Blizard. In addition to making a complete and comprehensive review of the development and production and use of powdered fuel together with illustrative description of the equipment involved there is given a list of purposes for which powdered coal has been used, in which is included the burning of lime and of refractory materials as well as the cement industry where it is perhaps most extensively used. The publication is issued as Bulletin 217 of the Department of the Interior, and copies may be had from the Superintendent of Documents, Government Printing Office, Washington, D. C., for fifty cents.



**ASPHALT FILLER FOR BRICK PAVEMENTS IS RAPIDLY
GAINING IN PREFERENCE.**

A YEAR AGO last December the National Paving Brick Manufacturers' Association, after careful research and study in the light of modern highway development and increasing traffic, announced its preference for asphalt filler for brick pavements except in cases where peculiar local conditions made the use of other fillers advisable.

Today, sixteen months after the foregoing announcement was made, highway engineers the country over are manifesting their endorsement of this action by turning to asphalt fillers.

A pavement, adequate in every respect to carry not only present but future traffic, at the lowest cost per year of service, and with complete satisfaction, always has been and will be the aim of the National Paving Brick Manufacturers' Association. If to cheapen a pavement means to weaken it—as is so often the case—such procedure never has the endorsement of economical judgment. Competition on a basis of "first cost" would be unworthy if it were to result in increased maintenance and the necessity for early reconstruction. A person might rightfully buy chewing gum or tooth paste on the basis of "first cost," where the questions of long life and continued satisfaction and economical service may not weigh so heavily, but buying pavements calls for quite different reasoning.

That engineers and the public appreciate this is evident from the manner in which asphalt filler has been adopted. That their judgment is sound in this respect is evident from the service that the asphalt filled brick pavements are giving.

Here is what one engineer has to say about asphalt filler—typical of numerous letters and comments on this subject:

"I belong to that school of engineers (by far the largest) that believes in the flexible rather than the rigid type of pavement construction as a general thing. (Of course we all recognize that there is a time and place for the rigid slab.) Therefore, I want to voice my endorsement of the asphalt filler stand taken by your association.

"I have built all types of pavements in my thirty years of experience. The brick are the ones still in good condition. Brick pavements, in my judgment, are the "cheapest in the long run" (to steal a tire company's slogan) and of the sev-

eral brick types, the asphalt filled type stands out supreme.

"I find no cracking due to temperature stresses, which means longer life. The asphalt makes the pavement flexible, allowing it to expand and contract or be lifted up and let down through the forces exerted by moisture, freezing and thawing. It makes a quieter pavement with a waterproof surface, thus preventing water seeping into the subgrade from above. Further, it is easily and most cheaply repaired, and doesn't curl up and down at the edges under influence of the sun.

"There is, however, one point that might be worth calling to your attention. Experience with asphalt filler has taught me that the less space between the brick the better. I have used both the vertical fibre (plain wire cut) brick and the lug brick. The first is ideal where asphalt filler is to be used. If lug brick are used the lugs should be so small as to be almost unnoticeable. The narrow joint means less asphalt to wear away and a smoother pavement. Your experience has been the same, most likely, but I thought I would call this to your attention." —Dependable Highways.

**PAVING BRICK, AFTER 14 YEARS IN THE STREET,
WORTH MORE TODAY THAN WHEN THEY
WERE BOUGHT.**

RADIATING FROM Jacksonville in various directions through Duval county, Florida, are four brick roads of various lengths which give conclusive evidence of the superiority of brick among paving materials and the advantage gained by the public in surfacing highways with this material. The highways by name are the King's (Dixie) Highway, Lackawanna Road, Tallahassee Road and Pablo Beach Road.

These thoroughfares were paved with brick thirteen and fourteen years ago according to a very simple design. The brick were laid directly on fine Florida sand—universal in this part of the country—with a curb at either side, much of it vitrified clay curbing. Originally no other material but fine sand was used as a joint filler.

During thirteen or fourteen years these pavements have borne an increasingly heavy traffic, both as regards volume and density, and yet today, with little or no attention paid

to maintenance, these thoroughfares can be comfortably and safely traveled at speeds upward of 40 miles an hour.

Now, for the economic history. The original cost of construction on all of these roads was \$1.48 or \$1.49 per square yard laid, plus the additional amount of 18 cents per lineal foot for curb. No record is available as to maintenance cost, but officials agree that it has been negligible. Today the brick in these highways, many of them originally purchased as No. 2's and sold at No. 2 prices, are worth more in dollars per thousand than the day they were laid.

A section of the highway at Pablo Beach recently was taken up and relaid with asphalt filler at a cost of 73 cents per square yard, thereby providing an adequate highway for many years in the future. Surely few paving materials can present an equally attractive, economic record.

—Dependable Highways.

A STRIKING EXAMPLE OF THE DURABILITY AND ECONOMY OF BRICK STREETS.

THE MAY ISSUE of Dependable Highways, issued by the National Paving Brick Manufacturers' Association, of Cleveland, Ohio, publishes the following interesting letter from Mr. Schley Gordy, superintendent of public works, Columbus, Ga., giving an account of repairing a twenty-three-year-old brick street in that city.

No need to add our own comment to such a letter as the following received from Mr. Schley Gordy, superintendent of public works, Columbus, Ga. It speaks for itself and fairly shouts the vitrified paving brick gospel of "long-life, low maintenance cost and genuine economy." Read what happened to a twenty-three-year-old brick surface on sixty-foot street carrying double car tracks. Mr. Gordy's letter follows:

"The records of our office show that the brick pavement on Tenth street, between Broad street and First avenue, was laid in 1899. This street is sixty feet wide with a double line of car tracks down the center. In the latter part of 1922 we took up the brick on the south side of the car tracks and relaid them.

"The brick were taken up, cleaned and stacked. Brick chips and dirt were raked from the sand cushion. The cushion was then loosened with rakes and additional sand added to bring the cushion to the desired crown. Broken brick and those too badly worn for use were culled, and the good brick relaid as far as they would go. The balance of the pavement was laid with new brick, then rolled and grouted. The cost of the job was as follows:

"Labor and material (except new brick).....	\$256.33
"4,776 new brick at \$36.00.....	171.94
"Total cost	\$428.27
"Old brick surface	657.1 sq. yds.
"New brick surface	119.4 sq. yds.
"Total	776.5 sq. yds.
"Cost per square yard	\$0.5515"

BLAIR ON ROAD DIRECTORATE.

In the announcement of the election of officers and directors of the American Road Builders Association the brick industry finds representation in that Will Blair as vice-president of the National Paving Brick Manufacturers' Association, Cleveland, was named as one of the directors for three years. The time and place selected for the next national good roads show was Chicago, January 13-19, 1924.

POSTURE IN WOMEN'S WORK.

THE EFFECT on the physique and on the health of industrial workers of the monotonous and rapid repetition hour after hour and month after month of movements in themselves light and simple has recently begun to challenge the attention of the medical profession. Especially has it done this since this work, so characteristic of modern industry, has been more and more monopolized, usually on a piece basis, by women whose deftness and swiftness have enabled them to take possession of occupations which did not require much muscular strength.

So far, although conclusive proof is lacking, the weight of opinion seems to be that serious injury may be caused by any work, the performance of which requires cramped, constrained, or awkward posture. Less general and less positive is the opinion as to the effect of the work on the nervous systems, especially in women.

Work that requires bent shoulders and drooping of the head compresses the chest and interferes with the breathing, and this alone leads to many ills. It also forces the ribs and all that they enclose down upon the abdomen and tends to displace its organs. Among other results this pressure causes a "folding in" of the wall of the abdomen along the belt line and the partial stoppage of material moving through the intestines, and this leads to constipation, diarrhea, nervousness, abnormal fatigue, and headaches.

Work that requires a sideway "slouch" crowds the ribs between a low shoulder and a high hip on one side and expands them on the other side, interfering with the breathing and paving the way for tuberculosis. In girls and women this slouch also tends to displace other important organs.

Such results may be prevented or lessened by change of work; for instance a change from work that requires stooping forward to work that requires reaching upward, or that requires a sideways slouch, or that requires no particular attitude. Such a change naturally involves a loss in speed, which for a time may cause serious money loss to a piece-worker; but, especially in young girls, it will help to prevent ill health and possibly deformity.

Proper chairs are also helpful. For instance, a sitting all day at one's work is probably nearly as bad as standing all day, a combination of chair and desk (or work bench) whose relative heights would permit one to work with equal ease whether standing or sitting may be advantageous. Many types of "proper" chairs have been designed; but, naturally, few or none of them seem to be fitted to all types of work. Certain factors seem, however, to be advisable in all chairs.

All chairs, for instance, that are too high to permit the occupant's feet to rest firmly on the floor, should be provided with a foot rest that would prevent the lower part of the legs from dangling and the upper part (thighs) from pressing against the edge of the chair; practically, this means that women should not be called upon to use chairs built for men. Rests for the back are also extremely helpful in lessening fatigue.

That the constant repetition of a movement does in time affect the nervous system is more than probable, but how importantly it affects it has not been established. Anderson, for instance, states that girl after girl in a cigarette packing factory was found when off duty to be constantly repeating the motions she made while at work; and insists that such tendencies should be investigated.

The best preventives so far suggested seem to be the daily utilization of the forenoon and afternoon rest periods now in vogue in most factories either in complete rest or in exercising muscles not used in working time. When combined with periodic changes in occupation that call for changes in the muscles used such utilization should give effective help in preventing serious troubles.

For further information write to the Surgeon General, U. S. Public Health Service, Washington, D. C., for Reprint 779: Posture of children. No charge.

VISITORS FROM AFAR.

WE WERE VERY glad to welcome to The Clay-Worker sanctum recently Mr. Thomas Campbell, of Sidney, Australia, who is making an extended tour of inspection visiting as many of the nation's brick and tile plants en route as opportunity permits. He is accompanied by Mrs. Campbell, thus combining pleasure with business. Mr. Campbell is plant manager for the Wunderlich Manufacturers, Limited, who have several brick, building tile and roofing tile plants in Australia.

We show a view of one of the latter by which the reader may see it is a substantial, well designed structure. It is roofed with their clay shingle tile. The four clock-like towers which are seen in the picture are elevator shafts used to convey the ware from the dry floors to the ground floor of the factory.

At another plant they make interlocking tile in various

they are happily getting back to normal, prosperity again being the rule in all industries, particularly so in the building lines.

Mr. and Mrs. Campbell enjoyed a delightful ocean trip, being over three weeks on shipboard. Among the passengers were Mr. and Mrs. Robert Storm of Durban, South Africa. Mr. Storm is likewise a clayworker touring the States, visiting clayworking plants, Mr. Storm being one of the leading manufacturers of brick in his home town. Naturally they became boon companions and took part in the usual amateur theatricals and parties arranged for the pleasure of the passengers on such voyages. We are pleased to reproduce a snap-shot of Mr. and Mrs. Campbell and Mr. Storm, the latter two being in costume or fancy dress, and one of Mr. and Mrs. Storm, the latter taken on the Isle of Rarotonga, in the Pacific Ocean, where the voyagers stopped for recreation.

We anticipate the pleasure of a visit from Mr. and Mrs.



General View of the Rose Hill Tileries of The Wunderlich, Ltd., Australia and New South Wales. What Appears to be Clock Towers are Elevator Shafts in Which the Tile are Lowered from the Upper Floors of the Drying Room to the Ground Floors.

colors, both glazed and vitrified. They now have a large demand for their multi-colored tile. Recently they built a sample roof at an exposition, using every color of tile made. The idea being to make the roof so unusual, the color scheme so varied as to attract attention. The plan worked better than expected, the variegated colors of the tile challenging the admiration of the architects who now specify similar combinations for high cost dwellings and other detached buildings. Whether it be a mansion or a cottage, a shore bungalow, or an inland suburban home, clay roofing tile adds beauty and permanence, for the bright colors blend with the landscape and add charm to the scenery. The red tile is still the most popular, but there is a growing demand for other colors, brown, yellow and intermediate shades, either separate or mingled, all add beauty to the sky line wherever used.

Mr. Campbell reports an excellent business condition in Australia, which is distinctively a white man's country, and it is the intention to keep it so. In common with the rest of the world they suffered greatly from the World War, but

Storm at a later date, our latch string hangs out always to all visiting clayworkers particularly those who come from distant climes.

KENTUCKY MEETING AT MIDDLESBORO.

A meeting of the eastern group of the Kentucky Clay Products Association has been called at the new Cumberland Hotel, Middlesboro, Ky., July 12. There is to be a mid-summer meeting of the Kentucky Retail Lumber Dealers Association at Middlesboro July 12-13, and since to quite an extent the clay products men sell and distribute through the hands of the retail dealers, this was considered as an opportune time and place for a clay products group meeting, as those attending will have an opportunity to mingle with the dealers as well as have a session of their own. The officers of the Eastern Kentucky group are: W. H. Hall, Maysville Brick Company., Maysville, chairman; F. O. Schneider, of A. H. Schneider & Sons, Nicholasville, secretary.

REPORT OF BRICK, TILE AND SEWER PIPE DIVISION
MEETING, PACIFIC NORTHWEST CLAYWORKERS'
ASSOCIATION.

A TOTAL of over thirty attended the meeting, June 2, coming from all parts of Washington and from Oregon and British Columbia. The program on auger machines lamination and bricklaying school work proved to be instructive, practical and of financial value to those who will follow the advice given, not only from the papers delivered but also from the lively discussion which accompanied and followed each talk.

For a summary of Mr. Cook's work in his bricklaying school, address Mr. C. W. Cook, 3135 Broadway North, Seattle.

Mimeographed copies of Mr. Adderson's paper on lamination and die working and the ceramic department's eleven-page outline of the same subject can be obtained from the



Mr. and Mrs. Robert Storm, Durban, South Africa, at Rarotonga, enroute to the United States.

office of the secretary, ceramic engineering department, University of Washington. The request from non-members of the association must be accompanied by 25 cents to cover the cost of the mimeographing and postage.

Secretary Wilson has sent out the following letter to the clayworkers of the Northwest:

"You will save money if you join the association immediately, as we intend to continue the work of preparing and printing papers of technical and practical interest to the Clayworkers of the Pacific Coast Northwest. The distances are so great that some of you can not come to all of the meetings, so we will send part of the meetings to you and will in time hold the meetings in other parts of the Northwest. However, if you do not send in your name on an application blank, we will be forced to remove your name from our mailing list. Over forty have joined the association so far and the enrollment will soon climb over the fifty mark.

As a result of a resolution passed at the meeting, the following telegram was sent to the American Construction Council in the name of the association:

"Franklin D. Roosevelt, 120 Broadway, New York City: We understand that the American Construction Council proposes to undertake a publicity campaign to stop new construction in all parts of the country for ninety days. We are not familiar with conditions in the East except from news reports, such as Literary Digest, but understand that millions of dollars of work have already been indefinitely postponed. We feel that building is a basic industry and highly essential to national prosperity and delay at this time will result in a serious depression. In Pacific Northwest building is only beginning to revive after a number of years' slump. We do not have labor shortage here and prices of building materials are not unreasonable. Our manufacturers, architects, contractors, builders and laborers need work this year. Your proposed action will tend to drive our skilled mechanics to other occupations and to other sections and result in a permanent loss. If any warning is needed, we feel that the publicity already given your proposed action is more than ample and we earnestly protest the continuation of such propaganda covering the country as a whole and the Pacific Northwest in particular. Our association is composed of manufacturers and employes of brick, tile, sewer pipe, terra cotta, pottery and other clay product



Mr. and Mrs. Thos. Campbell and Mr. Robert Storm in costume on board ship.

industries of states of Washington, Oregon, Idaho and British Columbia. At meeting held yesterday a resolution was passed that this protest be wired to you. Pacific Northwest Clayworkers' Association, Hewitt Wilson, Secretary."

We feel that it is imperative for us to unite all our efforts in encouraging building at this time and to resist movements of this kind, which tend to discourage construction. Have the various organizations of your community sent in protests to the American Construction Council?

Next Meeting.

Our next meeting will be held late in the summer or early fall and will be a general meeting for the whole association. One single, important topic is already under preparation. It is one of the most vital problems of the clay plant, manufacturing brick, tile, sewer pipe, terra cotta, fire brick, pottery or any other clay product. Production is delayed by this one operation more than any other around the clay plant. It will require considerable ingenuity to crowd the discussion of this subject into a single afternoon and evening program.

Dryers and Drying.

We invite drying specialists to come this way on their

summer vacation. One big meeting devoted to one big subject of vital importance to all clay manufacturers, in the one big vacation center of the country, in the one big vacation time. Seattle and the Puget Sound country furnish an ideal location for a summer vacation—cool, spring-like weather, salt water, fresh-water lakes, snow-covered mountains, big, deep, cool forests, fishing, boating—any sport you wish; any variety of accommodations—metropolitan life in Seattle to camps on the beaches and mountains. Drive out in your car, visit the big plants of the Pacific Northwest and see the wonderful possibilities for future development in all branches of the clay and ceramic industry.

Our association has a membership of over fifty and is only six months old. Seventy attended the last general association meeting and over thirty came to the Brick, Tile and Sewer Pipe Division meeting held June 2. For particulars, address Hewitt Wilson, secretary, Department of Ceramic Engineering, University of Washington, Seattle."

HEWITT WILSON, Secretary.

COMMON BRICK MANUFACTURERS ASSOCIATION TO MEET AT LOS ANGELES, FEB. 10, 1924.

At a meeting of the directors of the Common Brick Manufacturers' Association in Cleveland, Tuesday, June 12, it was decided to hold the next annual convention of the Association at Los Angeles, California, the week of February 10, 1924. This action was taken as the result of a letter ballot by the members, indicating a decided preference for Los Angeles.

The directors considered other matters of importance pertaining to the work of the organization, which will be continued the same as heretofore, and along the same general lines. Mr. L. S. Collins of Los Angeles was elected fourth vice-president to fill a vacancy in that office.

Those in attendance were Max D. Almond, Texas; L. S. Collins, California; F. C. Ervin, Colorado; Charles Francis, Oklahoma; Tom W. Green, Iowa; Warren Griffiss, Maryland; William N. Cary, New York; John P. Cahoon, Utah; J. A. Pugh, Virginia; Otto C. Oehler, Missouri; George A. Parry, Massachusetts; William Schlake, Illinois; E. C. Shimer and T. E. Wilson of Pennsylvania; President Charles H. Bryan of Detroit; Ernest S. Barkwill, C. A. Bowen and R. P. Stoddard of Cleveland.

In due time the arrangements for special train service from all points east will be announced as same are completed. It will be made a gala event and the trip of a life time for pleasure and business will be combined in an overflowing measure.

"UNION MADE" BRICK.

In the Dodge Daily Reports on Building Operations there was recently a story of a strike at two brick plants with the only point of issue being that of unionizing the plants. One was the plant of Sayre & Fisher, at Sayreville, N. J., and the other was the Washburn plant of Glasco. In each case it was said there was no point of contention on wages, the point of contention being that all brick plants supplying the New York market be unionized. And it seems at least in the case of Sayre & Fisher that the demand followed a voluntary increase to brick yard workers of 10 percent. So the strike was purely one to enforce the closed shop and to show to what extent unionism is becoming a factor in the industry in the East. A somewhat similar situation it seems has developed once or twice heretofore, but in those days the manufacturers were permitted to organize themselves for protection against things of this kind, while

today no such organization among manufacturers is permitted. The situation is another reminder that we should not be satisfied with making the "open shop" simply an idle phrase.

IMMENSE INCREASE IN FOREIGN SALES OF BRICK AND CLAY PRODUCTS.

Alfred T. Marks

THE Department of Commerce reports that in the nine months of the present fiscal year ended on March 31 our exports of bricks and other clay products increased \$555,361 over the corresponding nine months ended on March 31, 1922. Not only have we registered this big increase of over half a million dollars in the nine months, but our brick and clay products have gone to a greater number of countries than ever before, and to several of these countries we have never before exported brick or any other of our clay products.

Following are the official figures for the past nine months as compared with the corresponding period ended March 31, 1922:

	9 mos. ended Mch. 31, '23	9 mos. ended Mch. 31, '22
Fire Clay Brick	\$1,164,843	\$ 924,086
Other Refractory Brick.....	172,556	86,900
Refractory shapes	209,955	56,540
Building brick and hollow tile....	296,880	137,072
Other clay tile.....	321,770	406,045
Totals	\$2,166,004	\$1,610,643

It will be noted that the biggest increase shown by the above statistics was in common brick and hollow tile, which considerably more than doubled their foreign sales as compared with the nine months ended on March 31, 1922. Fire clay brick also registered a tremendous jump, the increase being close to a quarter million dollars in the nine months.

Export authorities in Washington who are familiar with our present foreign trade in building materials predict that the United States overseas business in both common brick and hollow tile and fire brick for the fiscal year which will end on June 30, 1923, will be the greatest on record for any one year in the history of our foreign trade.

THE SCHOOLHOUSE FIRE.

The recent tragedy at what is known as the Cleveland school near Camden, S. C., in which a schoolhouse was burned with a horrible death toll of men, women and children, is an impressive reminder that every reasonable effort should be made to construct schoolhouses that are firesafe. We have some fires and tragedies in schools, theaters and other public gathering places even when they are constructed of brick walls, but all the happenings of this kind simply add evidence to the need for precautions against fire, and this naturally means building with fire resisting material in preference to the material which will add fuel to the fire once it is started. In the tragedy in South Carolina, where it is said seventy-three persons were burned to death the fact that the schoolhouse was old-fashioned and built of wood did not start the fire primarily, but it added to the tragedy when it was once started. Surely in this drive for greater protection against fire loss, and greater safety in our homes and public buildings, we may put some emphasis on the matter of those structures which house our school children of brick unloaders for a wage increase from 80 cents to and insist that they be built with fire resisting material.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

A FURNACE FOR ENAMELING ON GLASS.

QUESTION: I would like information in regard to baking enamel on automobile lights. Also what kind of a pyrometer to use to determine the kiln temperature.

Answer: An enameling furnace will do the work required, and such an equipment may be purchased from the Parker-Russell Company, St. Louis; the General Electric Company, Schenectady, N. Y., or the Gehrich Indirect Heat Oven Company, of Chicago. The heat required is not very high, and the firm furnishing the enameling furnace can furnish the entire equipment, including pyrometers; or the pyrometers may be obtained from the Thwing Instrument Company, Philadelphia, Pa., or the Brown Instrument Company, Philadelphia.

BOTHERED WITH STONES IN CLAY.

QUESTION: We are much bothered with stones from one-half inch to two inches in diameter in our clay. We have both a pug mill and a cutter, and would like to know what machine we should install to crush these stones.

Answer: The only satisfactory equipment for removing pebbles from a surface clay is a rotary dryer followed by a dry pan and screen. It is satisfactory in its results but the equipment is an expensive one and its operation adds to the cost of the product, yet a number of factories are using such equipment and we doubt if any of them regret having made the installation.

Conical rolls will remove the larger stones but it is important that the rolls be kept in good shape, otherwise as they wear hollow in the middle the stones will begin to pass through and soon the old trouble is back again.

It is a good plan to have an extra set of rolls and a grinding machine. This enables the operator to replace the worn rolls frequently and thus he gets a maximum benefit from the equipment.

A disintegrator will snap out many of the stones but neither this machine nor the conical rolls will completely eliminate the stones.

Yours truly,

CAREY P. ELLIS.

BEST METHOD OF GRINDING ARCH BRICK.

QUESTION: Some years ago we purchased a grinding table, for grinding brick for jack and circle arches. We are now unable to locate the name of the manufacturer. Can you give us some information on this subject which will help us out?

Answer: Suppose what our correspondent refers to is the old horizontal revolving table, with a disk about five feet

in diameter, the brick being clamped in adjustable frames of boxes, resting on bars, the grinding medium being sand in water, or carborundum. This method of grinding arches has been abandoned by nearly all face brick manufacturers, as it is too slow for the hand brick made in recent years, especially stiff mud brick. Most arch work is cut from the green brick, face brick manufacturers still grind some burned brick, using a much more efficient machine than the old grinding table. This is a simple and low priced grinding machine, on the plan of tool grinders, a stand supporting a horizontal shaft having a carborundum wheel on each end, with suitable rests and a hood over the wheel, and a fan for removing the dust. Carborundum Company, Niagara Falls, N. Y., will no doubt be able to furnish the whole equipment, selecting the proper grade of wheel, when the purpose for which it is to be used is specified.

LISTING DISTRIBUTORS.

ONE OF THE unique features of the Laclede-Christy, St. Louis, Bulletins is in that they carry an insert slip giving the names and addresses of authorized distributors who carry stocks of Laclede products. This not only helps the distributor but it helps beget a spirit of co-operation that makes for better business.

HOLLOW TILE FOLDERS.

FOR DIRECT by mail advertising on the part of the Hollow Building Tile Manufacturers there is splendid material in some hollow tile folders being issued by the association in each of which is shown pictures of three different types of hollow building tile home, with some text matter pertaining to hollow tile and a note to the effect that large descriptive folders of floor plans of various types of homes illustrated can be had upon request. This makes a splendid form of direct by mail follow up of local advertising.

ADVERTISING ELECTROS.

THE HOLLOW BUILDING Tile Association keeps on hand and supplies to its members, proofs of which are sent on request, some splendid electros for advertising purposes. These include two sets or forms, one of single newspaper column width, and one of double width. And the illustration and text matter cover a fairly wide range of structural uses of hollow building tile for homes and garages and for farm buildings, making a splendid layout of already prepared matter for hollow tile manufacturers to use in their local advertising. Those who are using these seem to be profiting from it and those who are not should get busy and use some of them.

HOME EXPOSITION AT ATLANTIC CITY.

THERE IS TO be a great home exposition and building show on the Million Dollar Pier at Atlantic City, June 16 to September 8th, which will add to the attractions of this great summer resort and to those attending association meetings there. Several interesting meetings are planned for the summer, including the American Society for Testing Materials, The National Association of Building Owners and Managers, a meeting of the pottery operatives and others of interest to clayworking and ceramic industries. The home show is under the auspices of the Home and City Beautiful Association with executive headquarters on the Million Dollar Pier and A. Conrad Elkholtz manager.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Remodeling Plant.

Editor The Clay-Worker:

We contemplate remodeling our plant, and if you can put us in touch with parties familiar with labor saving devices we would appreciate it very much.

With best wishes, and thanking you for past favors, we are,

Very truly yours,

Very truly yours,

CHARLES SCHNEBELIN, Secretary,

Plaquemine, La.

Plaquemine Brick Yard.

Wants to Buy Flower Pot Machine.

Editor The Clay-Worker:

I enclose check herewith for a copy of Griffen's book, "Clay Glazes and Enamels." Want to advise you that I am in the market for a flower pot machine. I am building a new plant at Denton, Tex., and will make a specialty of flower pots and art ware. Best wishes to The Clay-Worker.

DAUGHERTY ART POTTERY.

Change of Name.

Editor The Clay-Worker:

Please be advised that the Pacific Clay Products Company has been succeeded by The Pacific Clay Products, Inc., with offices at 600 American Bank Building, Los Angeles. We will, of course, want you to continue sending The Clay-Worker, and want to express our appreciation for past courtesies.

Yours very truly,

ARCHIBALD DOUGLAS, Secretary.

As Others See Us.

Editor of the Clay-Worker:

Thanks very much for your kind letter of the 6th. The article entitled, "The Valuation of Clay Properties," is very interesting and instructive. It is a subject which has become of vital importance to all clayworkers, in their relations with the Internal Revenue Department, of the United States government, and its publication in your valuable journal shows that you have the interests of the craft at heart and are right up on your tip-toes all the time in dispensing information of this sort.

As old Rip Van Winkle was wont to say when he drained his glass—"May you all live long and prosper."

GRINNELL CLAY PRODUCTS CO.,

Ross V. Coutts, Secretary.

Information Desired in Regard to Burning With Oil.

Editor The Clay-Worker:

Having read much on the subject of Burning Brick With Oil would like to obtain some first-hand information in reference to the comparative cost of Burning Brick With Coal and Oil.

In using Round Down Draft Kilns with capacity for 100,000

brick made of alluvial clays which require 1,950 degrees Fahrenheit, assuming \$200 for the fuel (coal) cost and \$26.50 for the labor cost or an actual expense of \$2.26½ per thousand brick as a correct gross cost of burning.

My information is that the best obtainable price on brick burning oil delivered here is six cents per gallon.

Will someone who has had experience advise how many gallons of oil would be required to burn under the above stated conditions, and whether or not a saving can be effected which will justify substituting oil for coal here.

H. H. STAFFORD,

President Georgia-Carolina Brick Co.

Augusta, Ga.

Ohio Brick Man to Take Well Earned Vacation.

My dear friend Randall:

Just want to say "howdy," and incidentally mention that I resigned my position as vice-president and general manager of the Burton-Townsend Company, effective May 31st.

Mrs. Lucktenberg and I expect to spend the summer at Buckeye Lake, Ohio. I have no immediate prospects, and nothing to do but fish, go bathing and motor boating. I have a nice garden in connection with the cottage, and expect to get back to nature. With the fish we catch, and the garden, we will be well supplied. All we need is a sack of salt and a nickel's worth of matches.

If you have the chance, I would be more than pleased to have you run over here at good old Buckeye Lake, and have a real enjoyable time. The latch string is out, and you are more than welcome. Buckeye Lake is on the C. N. & Z. Electric Line, about thirty miles east of Columbus. Cars run right to the lake.

Mr. R. C. Burton is feeling good and looking fine. Business is booming, and plenty of orders on hand for the balance of the year.

With kindest regards, I am,

Yours very truly,

WM. K. LUCKTENBURG.

Zanesville, Ohio.

Brick in Great Demand in Virginia.

Editor Clay-Worker:

In response to yours of recent date, relative to the brick situation in our territory.

On June 1st, we had 600,000 burned common brick on hand and 650,000 green brick. We had bonafide orders on the books amounting to 2,800,000; the sale price is \$14.00 per thousand on cars at the yards.

During the month of May, we burned 1,000,000 brick and we shipped 1,105,000. We had no shutdown. Outlook for business this month is good. Efficiency of labor is normal. We are making more than a million brick a month and the demand is increasing. It takes all that we can do to fill our nearby local orders in a radius of fifty miles, although we could get a lot of business outside of our territory if we could supply the brick. We could take orders today for about all the brick we can make during the year 1923, but owing to the uncertainty of labor and the extraordinary high price of coal, we hesitate to book very far ahead.

Yours very truly,

WILLIAM AND HEDGECOCK, INC.,

E. L. Williamson, Pres.

TRUCKS FOR REDUCING HANDLING COSTS.

SEVERAL CLAY PRODUCT manufacturing concerns are using with gratifying results a new type of lift truck for handling tile and other clay products.

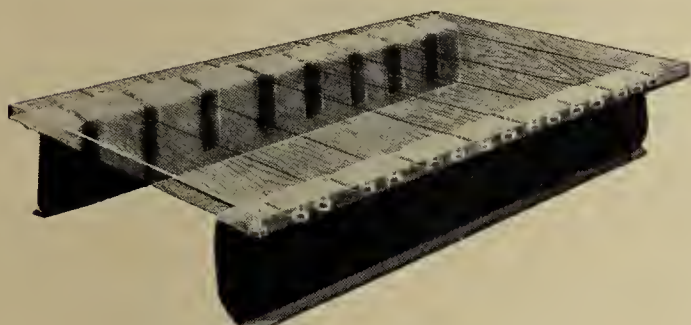
These are styled the Barrett Lift Trucks. They can be pushed under the loaded racks or platforms and with a single stroke the handle lifts the load, and on the large Hyatt roller-bearing wheels it rolls gently and easily.

For fragile goods, especially large green tile or sewer pipe, the Barrett lift truck is made with a spring frame and rubber tires, reducing breakage and spoilage to the absolute minimum. The racks may be made of steel to go directly into the dryer, saving still another handling.

One of the illustrations shown is of the lift truck used for handling pottery at the Robinson Clay Products Co., Maspeth, L. I., New York. Note that the racks filled with pottery are high enough to permit the truck to pass beneath



The Barrett Lift Truck in Use.



The Barrett Steel Leg Platform.

with a clearance of about one-half inch when the truck is in a lowered position.

Another of the views shows the Barrett Steel leg platform, for which it is claimed that it retains the advantages of the wood top with the strength and long life of the steel supports.

These lift trucks and steel platforms are made by the Barrett Cravens Co., Chicago, Illinois.

TWO MILLION KILOS.

Two million kilos represents about the annual export of fire brick and other refractory products from this country to Brazil. But don't get this kilo thing mixed up in your mind with marks of Russian rubles, for it is nothing of the kind. It is a unit of weight and is equal to 2.2046 pounds. A special report from the Department of Commerce at Washington on the market for structural materials in Brazil says that most of the building brick are made locally, but most of the refractory brick are imported. Germany furnishes some of them, and a share of trade goes to England and France, but since

the war the United States has been leading the list with a total around two million kilos a year.

METHODS OF MEASUREMENT OF THE PLASTICITY OF CLAYS.

EVERY WORKER OF CLAY realizes the importance of plasticity and knows, in a general way, what plasticity is and yet scientists have not been able to agree on a definition for it. We know that some clays are more plastic than others and yet it is extremely difficult to determine just how plastic any clay or other material is. In making pottery and some other clay products it is necessary to include other materials which are not plastic along with the plastic clay and the clay used for such purposes must be more plastic than would be necessary if it were to be used by itself, according to F. P. Hall of the Bureau of Standards. In other cases, such as the manufacture of sewer pipe and hollow tile, the plastic clay must be pressed through narrow openings in dies and some plastic clays are much more suitable for such purposes than others by reason of greater plasticity. At present it is a somewhat laborious process to determine whether a clay is plastic enough for a given purpose



The Barrett Lift Truck.

because of the lack of a satisfactory method of measuring plasticity. In a report of the Bureau of Standards a number of proposed methods for measuring this property are described and it is shown that none of them is entirely satisfactory for application to clays.

An account is given of a large amount of work done in a study of the operation of the method of Bingham and Green. This method consists of forcing the material through a tube of small internal diameter, measuring the rates of flow under various pressures. It had been stated by the originators of this method that the values obtained could be reduced to values independent of the size of the tube by the use of certain formulae derived by them, but it does not appear, from the results of the present investigation, that this is the case so far as clays are concerned. However, some interesting results are obtained by using the same capillary tube with the different clays. It is believed that this study will assist in the development of a practical method for measuring plasticity.

This report is Technological Paper No. 234 of the Bureau of Standards entitled "Methods of Measurement of the Plasticity of Clays." It may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The price is 10 cents.

OBITUARY.

DEATH COMES TO JAMES B. OBERLY.

Again we are called on to chronicle the passing of an old-time member of the N. B. M. A. James B. Oberly, of Wilmington, Dela., died at his home in that city May 27, after two years of illness following a paralytic stroke. Mr. Oberly was sixty-six years old and had been in the brick business nearly forty years, starting in the business first at Perkassie, Pa. He moved to Wilmington in 1889 and organized the company which is still in existence under the name of James B. Oberly, and which has been under the active management of his sons, Howard H. and Charles M. Oberly, for the past two years. The sons will continue the business along the same lines that has governed it in the past.

Mr. Oberly had been active in the civic affairs of Wilmington, having served three terms as a member of the city council, two of which he was chairman of the finance committee. He was a member of the Masonic and other lodges. Mrs. Oberly, one daughter, Mrs. George H. Huber, and two sons, Howard H. and Charles M. survive.

IOWA MAN ANSWERS LAST SUMMONS

Lorenz Aulman, for many years at the head of the clay-working department of the Eagle Iron Works, Des Moines, Ia., died June 14, at Los Angeles, Cal. Mr. Aulman had been in Los Angeles for a number of years, having charge of the company's business on the West coast. Mr. Aulman had a wide acquaintance among the clayworkers of the land, all of whom held him in very high esteem.

DEATH OF PIONEER BRICK MANUFACTURER OF UTAH.

Gottlieb Gessel, 74 years of age, pioneer brickmaker of Cache Valley, died at his home in Providence, Utah, last month, as a result of cancer of the stomach. He was born in Grase Karl Bach, Germany, and had resided in Providence for forty-three years, during which time he had been engaged in the brickmaking business, having been the first to take up this line of occupation in the county. Five sons and six daughters survive.

NEW JERSEY TERRA COTTA MAN DEAD.

William D. Frerichs, Tottenville, Staten Island, N. Y., a pioneer in the terra cotta branch of the ceramic industry, died at his home on Amboy Road, May 17, aged seventy-seven years. He was one of the organizers of the Atlanta Terra Cotta Co., having established this company with Samuel Whitehurst and the late Charles U. Thrall, in 1898. Upon its reorganization several years ago, he resigned his connection and became affiliated with the Federal Terra Cotta Co., Woodbridge, N. J. Mr. Frerichs became identified with the terra cotta field in 1877, when he joined the organization of the Perth Amboy Terra Cotta Co., Perth Amboy, N. J., then being formed, and the only such company in this line in America. During his twenty-one years of service with this concern, he was employed practically in every capacity at one time or another. About two years ago, he suffered a stroke of paralysis and retired from active business.

COLORADO BRICK AND TILE MEN GETTING THEIR SHARE OF PROSPERITY.

Activities in the building trade in Colorado are unusually brisk, and the brick manufacturers are experiencing a greater demand than for many years. They are accordingly installing new machinery and appliances to increase the capacity of their plants. Mr. William H. Merkel, the energetic representative of the Hadfield-Penfield Steel Company, Bucyrus, Ohio, reports having sold new machinery and dryer equipment for the following plants:

The Denver Sewer Pipe & Clay Company of Denver, Colo., is building a complete new plant for the manufacturing of stiff mud wire cut face brick. They have also placed their order for the equipment of a 16-tunnel waste heat dryer. This plant will have a capacity of 50,000 brick per day.

The Golden Fire Brick Company at Golden, Colo., placed their order for complete equipment for the installation of an 8-tunnel waste heat dryer; also a new machine.

The Staudard Fire Brick Company of Pueblo, Colo., placed their order and are now installing a new machine which will increase their capacity about 40,000 brick.

The Summit Press Brick & Tile Co. of Pueblo, Colo., have just placed their order with Mr. Merkel for a complete stiff mud brick plant, together with a 12-tunnel waste heat dryer. The entire equipment of this plant is furnished by the Hadfield-Penfield Steel Company.

The La Junta Clay Products Company at La Junta, Colo., have made a number of improvements. Just recently completed a new and modern power plant. All of their machinery is being thoroughly overhauled and they are discarding the use of teams in their clay pit and will replace same with one of the American 4-ton gasoline locomotives.

NEW COMPANY TAKES OVER WISCONSIN PLANT.

The Northern Clay Products Company of Manitowoc, Wis., recently purchased the plant of the Leach Clay Company. Included in the purchase is over seventy acres of land. The company will make extensive improvements in the plant with a view of manufacturing common and face brick, hollow building tile, drain tile, sewer pipe, flue lining and fire proofing. L. B. Lange, C. M. Kellerman, H. M. Sweet and A. R. Trace are interested in the company, the latter will be general manager of the plant.

MANUFACTURING INSULATING BRICK.

The United States Refractories Company, Inc., San Luis Obispo, Cal., have completed the road into their Diatomaceous Earth quarry and have started shipping the material to the plant. The manufacture of insulating brick has been started, and there are orders enough ahead to keep them in full production for a long while. One new 30-foot round down-draft kiln is finished and the other one will be finished in about three weeks. This will give a burning capacity of practically 400,000 brick per month.

MILWAUKEE HAS 21 MILES OF BRICK PAVED STREETS.

Brick pavement ranks second in the classification of the pavement of streets in Milwaukee, the department of public works reports. All but 61.56 miles of the total of 513.27 miles of local streets are now improved. A total of 9.64 miles of streets was added to the city last year. During 1922, 34.55 miles of streets were improved. Classification of pavement now laid in Milwaukee shows asphalt, 157.2; brick, 21.66; granite block, 14; sand stone, 11.93; creosote, 11.66; bituminous concrete, 11.20; cement concrete, 4.86, and macadam, 219.17. Alley paving now totals 178.93 miles.

Written for THE CLAY-WORKER.

OHIO CLAY NOTES.



CLAY PRODUCTS industry, like the other industries of Akron and the country, are enjoying a prosperity the extent of which is measured by production inadequate for orders, according to John J. Starr, treasurer of the Robinson Clay Products Company. For several months little, if anything, has been said of Akron's clay commodity producers as to the extent of their business.

The question was put to Mr. Starr by The Clay-Worker scribe: "Is it true that the clay industry here is enjoying the greatest prosperity of its history?"

"I should hardly say that it is," he replied. "Conditions in Akron are hardly conducive for that, for the clay industry is not what it was five years ago in Akron. In the past five years any number of manufacturers of our line have left Akron to locate elsewhere, or have quit production entirely. The Robinson Company itself formerly had five plants here and now maintains only one, the others having been taken to other localities. This is a direct result, for one thing, of too much labor competition. It used to be our practice to engage young men as apprentices and pay them a dollar a day until they had learned pottering. When the rubber plants began to go full tilt and pay high wages the class of labor we needed was offered three or four times as much as we could possibly afford. The clay industry had its choice of taking unsatisfactory foreign labor or getting into the fields where the labor competition was not so acute. It took the latter course.

"Then, too, there have been other factors in this industry that have limited its ability to expand. There was a time when Akron was the center of the clay business, when we had large calls for churns, butter crocks, pots for cream separating and other similar articles. Each farmer then handled his own dairy products. Today, the milk goes into cans and is collected by centralized creameries.

"On the other hand, we enjoyed a tremendous rush of business for a while as a result of prohibition. Crocks for the making of home brew were in enormous demand. That, too, has fallen off.

"With the spreading out of the field of clay works in search of cheaper labor, and also of new clay deposits, which have begun to give out locally, has come another problem of transportation. Clay products are heavy and freight rates are high. This concern, for instance, can hardly think of taking an order west of the Mississippi.

"The clay industry, as a whole, is enjoying a great increase in business as a result of the building boom, paving improvements, buildings and other brick and tile construction projects that have been held up by the war have come in for attention again and the clay business is prospering with the rest of the manufacturing world."

Bruce Z. Healy, Cleveland, a stockholder of the Consolidated Clay Products Company, Canton, O., a \$3,000,000 concern, with a plant at Malvern, has filed suit in common pleas court in Cuyahoga County, alleging that the company is insolvent and asking that a receiver be appointed to take charge of the assets.

The plaintiff, in his petition, charges that G. O. French, president and treasurer of the concern, and G. B. French, one of the directors, with a number of irregularities in handling the affairs of the company. He says that in March, 1923, he asked for an accounting and that his request was denied. Again in April, 1923, he avers, he asked for permission to

inspect the books of the company and that his second request was also denied.

William M. Shinnick, 76, president, treasurer and general manager of the Mosaic Tile Company, Zanesville, O., died recently at his home in that city.

Extensive expansion is contemplated by the Marietta Rustic Company at their plant in Zanesville, O., officials of the concern have announced. The new unit will be completed within the next month, making the Zanesville plant the largest manufacturer of clay firelogs in the United States. Improvement include erection of another kiln. The firelogs are being made entirely by hand with the exception of grinding the clay.

John R. T. Clingan, vice-president of the Niles, O., Firebrick Company, sailed recently for Southampton, England, from which point he will tour England and other European countries.

W. M. Bateman, former vice-president of the Mosaic Tile Company, was elected president to fill the unexpired term of William M. Shinnick, at the reorganization meeting of the directors of the Mosaic Zanesville, O., Tile Company recently. W. E. Miller of Newark was elected vice-president to succeed Mr. Bateman; N. E. Loomis, former secretary-treasurer and general manager until January 1, 1924.

The Standard Clay Company of Empire, Ohio, has been formed with capital of \$100,000 to mine and sell clay as well as coal and other deposits. The incorporators are Fred W. Stone, N. G. Belt, C. G. Jones, George S. Cotrell and R. R. Holmes.

The brick industry in the Canton district shows signs of slackening for the first time since early spring. A survey of plants in the Canton district early in June revealed that operations are no longer capacity, although prospects for the remainder of the summer are exceptionally good.

Paul B. Belden, of the Belden Brick Co., Canton, largest distributors of building brick in this section, attributes the falling off to the let up in home building. Contractors have almost bought their season's needs and for this reason orders are not so plentiful. Brick buying started earlier this year than in many years, due to the fact that a phenomenal season in building was predicted. High prices of materials retarded this boom, it is said. Prices remain the same and there is little indication of a change the remainder of the summer, it was said this week. Demand for paving block continues strong and road construction awards are still being made in all counties hereabouts.

—BUCKEYE.

LOUISVILLE PLANT DAMAGED BY FIRE.

Fire, believed to have started from sparks of a passing switch engine, destroyed the stables and several large sheds of the P. Bannon Pipe Company, Louisville, Ky. Two mules were suffocated and an automobile and a quantity of hay were destroyed in the stables. The sheds housed several thousand tile pipes. The total loss was estimated at \$5,000. During the fire, several car loads of coal became ignited, and the dense smoke hampered the work of firemen until several streams of water were thrown on the pile.

PITTSBURGH MAN GOES TO CLEVELAND.

Park Hitchins, formerly Pittsburgh district manager of sales of the United States Refractories Corporation, Mount Union, Pa., has become identified with the General Refractories Company, and will be associated with R. A. MacDonald, in the Cleveland office of that company. D. M. Thorpe, formerly in the Pittsburgh office of E. J. Lavino & Co., Philadelphia, in charge of refractories sales, has been named to succeed Mr. Hitchins with the United States Refractories Corporation.



Entered at the Indianapolis postoffice as second-class matter.

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FORTIETH YEAR OF PUBLICATION.

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OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 79. June, 1923. No. 7

CURRENT COMMENT.

The railroads are doing better.

* * *

When wage demands pass the dollar an hour mark they are certainly going up.

* * *

The spring rains have served to emphasize the importance of artificial drying methods for brick.

* * *

Some are calling it the "non stop dance of higher wages," and claim that it has made the building situation groggy.

* * *

There is a prize waiting for the man who can discover a quick way to convert carpenters into bricklayers, and make them like it.

* * *

The man who fails to keep up with new things developed by research work is overlooking some opportunities to make the progress he should in his business.

* * *

The delivery of brick for building purposes ten to fifteen miles out from the plant or the railway station is not merely a dream of the future but is among the actual happenings of the times.

* * *

Steady improvement in the manufacture and in the burning of brick is steadily increasing the percentage of face brick and lessening the quantity of what we used to class as common and soft.

* * *

During the early summer months is a good time to prepare literature about flue lining and caps, fire brick, and other

clay products entering into the building of chimney flues and fire places.

* * *

Many will now proceed to discuss the best way and place to spend a vacation.

* * *

Coal is plentiful and a little lower in price, but still costs enough to make fuel economy an important item.

* * *

It has been pretty clearly demonstrated that artificial means for cooling down kilns helps speed up the work.

* * *

What has become of the old-fashioned man who didn't consider that thing we call overhead in figuring brick cost?

* * *

Work has slowed down some on a few corners of the building boom but in the country as a whole there is still a lot doing.

* * *

One problem of the day is how to get enough brick to supply the needs this summer and not go into winter quarters with a heavy surplus on hand.

* * *

The only questions remaining about the motor truck for delivery are those pertaining to the kind of truck to use and how to figure the cost of making longer deliveries.

* * *

Spring rains in some parts of the country at least interfered with crop planting and cultivating enough this spring to make good argument in selling drain tile during the summer and fall.

* * *

The brick industry is now awakening to the fact that salesmanship is an item of importance, and also that dealers connections help because for one thing they represent a strong element of salesmanship.

* * *

When only about 60,000 visitors attended the famous Kentucky Derby at Louisville and 150,000 attended the auto speedway races at Indianapolis, it looks like the horse is losing interest even as a sporting proposition.

* * *

Our trade with the rest of the world is a matter of importance, but even so it is home consumption that furnishes the market for about 90 percent. of all the things we produce. This is naturally more important than the other ten percent.

GOVERNING BUSINESS.

There is a reminder of that popular saying we should have more business in government and less government in business in reports that in Illinois efforts are being made to enact a state law regulating corporate industry and trade associations which would require trade organizations to have a license to do business and otherwise tie up business and association work with governmental red tape in a manner very objectionable. Business should, as Secretary Hoover has intimated, govern itself through its trade associations so well that there will be no call for government regulation or special laws for regulating the business and trade associations.

THE BLAME FOR HIGH COST.

In a recent review of the threatened collapse in the building boom owing to high building cost the question is asked, "Who is to blame?" Some of the answers are, "the law of supply and demand," "greed on the part of speculative build-

ers," "greed of the building material men," "greed of labor," "the closed shop" and "restricted immigration." After going through the many things written about the subject by different people from different angles one can hardly escape the conviction that several and not merely one of these things is to blame. And that the time is here for each division to clean house and look to its own affairs and seek to reduce cost instead of trying to pass all the blame on to someone else. Many in the brick fraternity have taken the right position in this matter, that of not advancing prices any even though they have had to pay more since early spring for help. The plain need of the day to save the situation in the building world is for all the people interested to get concerned with holding down expenses and cutting cost corners so that the good work may go on through this year and several years to come.

CHICAGO BREAKS BUILDING RECORDS.

For the first time on record in recent years Chicago makes a showing greater than New York, and the showing is in building operations, where in April, Chicago showed a total of \$61,814,965 and was the leader among the cities showing gains at a period when a slump from the peak was manifesting itself in the country as a whole. On the whole the south and west part of the country seems to be making a better showing in continued building operations than in the north and east, and it is from these sections that we have the hopeful signs for a continuation of the building boom throughout the year. In New York City a noticeable halt is in evidence now because of mounting costs and of increased wage demands which have added materially to estimated costs.

HOOVER HIGH POINTS.

Among the high points which stand out in the address made by Mr. Herbert Hoover, Secretary of Commerce, at the gathering of the Chamber of Commerce of the United States, one of the most cheering things in the face of high wages and high cost was the statement that we have made an increase in efficiency of production from ten to fifteen cents per capita as compared to pre-war days.

Also he says that this increase in productive efficiency has made it practical to raise the plane of the average citizen's comforts and conveniences of life something like 60 percent.

He assumes and rightly, too, that part of the increased efficiency and production per man is directly due to efforts of the Department of Commerce toward what is now termed simplified practices which have helped to eliminate waste. On this point he said that he had recently received a statement from one single group of producers estimating that the saving in production cost in that trade group already exceeded twenty-five million dollars per annum.

Mr. Hoover points out that, government has a definite relationship to the advance and maintenance of prosperity, "not as an agency for production and distribution of commodities, nor as an economic dictator, but as the greatest contributor in the determination of fact and of co-operation with industry and commerce in the solution of its problems."

The preservation of initiative and the safeguarding of the rewards of individual effort, character and ability are keystones, the Secretary said, which must be preserved, "for when all is said and done the finer flowers of civilization does not grow from the cellars of poverty any more than they grow from the palaces of extravagance. They grow from

the bettering comfort and well-being of the whole of great peoples."

VARIATIONS IN SIZE AND POROSITY.

There are two things that it is not easy to get positive uniformity of in brick. One is that of size, and the other is that of porosity. We can easily get uniformity of green size in brick or in hollow tile but in the finished sizes there is enough variation of shrinkage of different materials in the process of drying and burning that the problem today is that of striking an average, and of including with the specifications a reasonable latitude of variation. So far the Sub-Committee of the American Society for Testing Materials having this work in charge has not reached an unanimous agreement as to the permissible variations to be allowed in building brick. There is some of the same trouble in the matter of porosity, and this is complicated a little by the fact that some think the rate of absorption of moisture is more important than the total absorption, and so it goes. There will always be some differences here both in variations due to shrinkage and in porosity due to materials and methods of manufacture. So it will not be easy to set forth clearly specifications in brief form. Efforts of this kind, however, are resulting in better knowledge and good progress, and out of it all we are getting better standards in quality of brick than we have produced before. So it is something worth while and should lend encouragement to continued efforts at rational standardization.

SOME LABOR AND WAGE FIGURES.

Some special reports on wages and on statistics of skilled laborers and the building trades going the rounds these days furnish interesting food for thought. It is shown for example from figures taken from the census bureau that in five important building trades the number of skilled workmen was smaller in 1920 than in 1910. Here is the tabulation that is made:

	1920	1910
Brick and stone masons	130,000	160,000
Plasterers	38,000	47,000
Roofers and slaters	11,000	14,000
Stonecutters	22,000	35,000
Painters, glaziers and varnishers	248,000	273,000
Total	450,000	530,000

These are figures published in the Literary Digest for May 26, and along with them are some quotations from the "Wall Street Journal" which say that while the union wage scale varies from nine to ten dollars a day for the various trades, the actual prices paid run from twelve to sixteen a day and that as high as \$25.00 is reported as being paid to members of the trowel trades in the environs of New York City. Also it is said that instances are known where plasterers' pay has run as high as \$250 a week. Moreover no effort is made to justify these on the plea of living wages or fairness, but the union leaders say that they are willing to accept lower wages when supply dealers and contractors stop profiteering.

It is interesting to note that carpenters are not included in this tabulation of skilled workers who are scarcer today than they were ten years ago, and it is probable that the increase in number of carpenters is one explanation of why there is a heavier percentage of frame home building and

not enough brick and hollow building tile used in the new homes of the day.

The answer is plain enough that he who views may read. To get more brick and hollow building tile in home building we need more men trained in the skilled trade of brick-laying.

BOOK OF SMILES.

The current issue of "Smiles" is brimful of clever skits. It also offers some worthwhile suggestions of a serious sort for the attention of the progressive brickmaker. For instance, it tells "How to Dry More Brick and Dry Them Better." The problem of "What to Do About Brick" is solved in a very simple manner. If you are troubled in that way get a copy of "Smiles" or better still, write the Standard Dry Kiln Company, 1547 McCarty St., for "first aid" suggestions.

In a lighter vein "Smiles" remarks:

"Now is the time of the year when a fellow can be too slick to work but not too sick to go fishing." And

"Me an' You

"The sunfish plays in the water,
The starfish rests in the sand,
The flying fish uses the atmosphere,
And the poor fish walks on land."

EXCAVATORS IN GOOD DEMAND.

The Schofield-Burkett Construction Company, Macon, Ga., manufacturers of the Schofield-Burkett excavator, reports an unusually good business, having recently made installations at the following plants: Jackson Gravel Company, Jackson, Miss.; Ashville Fireproofing Company, Ashville, Ohio; Peerless Sand Company, Greenville, Pa.; Sutton & Suderley Brick Company, Coeymans, N. Y.; W. A. Ligon, Mayfield, Ky.; United Chemical Products Company, Buena Vista, Va.; National Sales Company, Hickory, Ky.

THE NEXT CHEMICAL EXPOSITION.

THE IMPORTANCE OF the chemical industry and its development and portrayal is such that the date has already been set and the work gotten under way for the next national exposition of chemical industries, which will be held in the Grand Central Palace, New York, the week of September 17. For the benefit of exhibitors a pamphlet entitled "Getting the Most Out of Your Exhibit at the Exposition," has been prepared and made available to exhibitors and prospective exhibitors. Those interested and desiring particulars as to exhibit space should write the National Exposition of Chemical Industries, Grand Central Palace, New York.

PUBLICATIONS.

OPTICAL METHODS—Optical Methods in Control and Research Laboratories is the title of a publication the second edition of which has been issued by Adam Hilger, Ltd., 75a Camden Road, London, N.W. England. This is a technical publication, being a guide to the selection and application of apparatus though no detailed description of instruments are included. Limp cloth, 1s. 6d.

A. S. T. M. PROCEEDINGS INDEX—The American Society for Testing Materials, 1315 Spruce street, Philadelphia, has published proceedings of this organization covering volumes 13 to 20, inclusive. The preface to this shows that in 1913 the proceedings were published in one volume, the remaining years

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covered by the index, the proceedings appeared in two volumes. Part One contains committee reports, discussions and so on, while Part Two contains technical papers and discussions. The index volume is well bound and will be a useful guide to those who have kept file of the proceedings.

TAKING AN AUTOMOBILE TRIP.

E. E. Ayars, chairman of the Refractories' Division of the A. C. S., and until May 1st superintendent of the American Refractories Company plant at Joliet, Ill., called at The Clay-Worker sanctum recently. Together with his family he is touring the middle states in an automobile, taking a well-earned vacation before taking a permanent position.

The banner goes to the Cleveland Builders Supply Co., this month for the following from their little house organ, "Material Facts," "As the Silk Worm said to the Caterpillar, a difference in material makes a material difference."

A Big Live Fact

One car of Fuel Oil—delivered automatically to a Standard Diesel Engine—will produce as much power as Eleven Cars of Coal.

Consider the difference in freight on the extra ten cars.

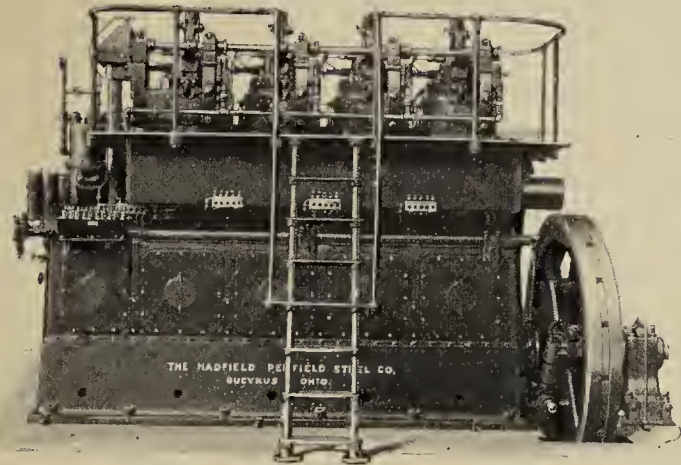
Consider the shoveling of coal and disposal of the ashes.

And then there is the saving in room and attendance.

The Clayworker who is interested in money saving and labor saving is interested in the Standard Diesel Engine.

Write for particulars about—
“Diesel Engine Saving in Clay Plants.”

The Hadfield-Penfield Steel Co.
Bucyrus, Ohio



200 HORSEPOWER ENGINE

**Wearing Parts
of
Manganese
Steel**



Clay Plant Repairs are saved with “Era” Manganese Steel Scraper and muller plates, pug mill knives, auger machine knives, gears and pinions and any other parts where there is excessive wear. We have patterns for all standard parts. Demand “Era” brand. Backed by years of tried service. Tough, hard, wear-ever. Saves and slaves for the Clayworker.

The Hadfield-Penfield Steel Co.
Bucyrus, Ohio

AMERICAN GASOLINE LOCOMOTIVE

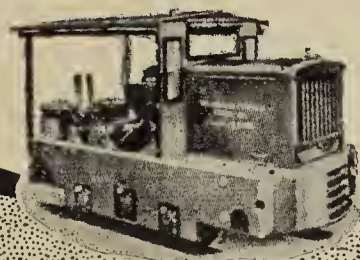
An Ideal Machine to Produce Continuous Haulage at Minimum Cost

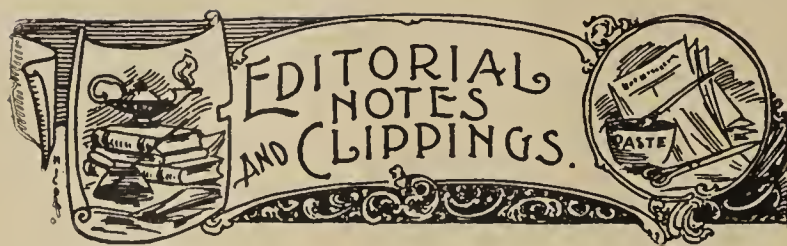
If you have haulage work to do, let the Gas-O-Motive do it. The engine is so simple in construction, so ruggedly built, that it can go through the severest service—service that would put other apparatus out of commission—and come out ready for the next job. “Gas-O-Motives” rarely visit the repair shop.

If you have a haulage problem send us your name and address.

“Over a 2,000 foot grade, ranging from 5 to 7 percent, the American Gasoline Locomotive hauls two cars of 2½ yard capacity each, and does it constantly. It works perfectly.” Okmulgee Brick Co., Okmulgee, Okla.

THE HADFIELD-PENFIELD STEEL CO.
BUCYRUS, OHIO





The Eureka Firebrick Company of Mt. Braddock, Pa., is making extensive improvements in the plant.

D. A. Burwell of Stoval, N. C., announces that he is in the market for a complete brick making outfit.

C. J. Dodge contemplates the erection of a hollow tile and brick plant at Moose Lake, Minn., to cost in the neighborhood of \$35,000.

The American Vitrified Pipe Company, Lisbon, Ohio, will build a new \$150,000 plant to take the place of the plant which was recently destroyed by fire.

Warren Churchill, of Frederick, Ill., recently purchased the plant of the Petersburg (Ill.) Brick & Tile Company and will at once put same in shape to be operated to capacity.

W. S. Glore, manager of the Danville Ice & Coal Company, Danville, Ky., writes his company is interested in establishing a plant at that place for the manufacture of brick and hollow building tile.

James E. Maddock, of Chicago, has gone to San Antonio, Texas, where he has purchased a substantial interest in the Texas Tile and Fire Brick Company. He will assume the office of vice-president and general manager.

The work on the new factory of the Buckeye Tile Company at Chillicothe, Ohio, is fast nearing completion. They will manufacture a high grade of Mosaic tile. J. Calvin Strayer is president and Eugene J. Hydell is general manager of the factory.

William H. Frink, for many years connected with the Frink Pyrometer Company, of Lancaster, Ohio, died at his home in that city, May 29, following a stroke of apoplexy. Mr. Frink was seventy-three years old, and had been interested in ceramics all his life.

William G. Price, together with his sons, J. P. E. Price and Aldrich Price, and Samuel Addis, have organized a \$250,000 brick manufacturing company at Chester, Pa. Work on the plant to have an initial capacity of 75,000 brick per day is already under way.

The Arizona Brick Improvement Company, recently organized at Tucson, Arizona, has plans under way for a plant to be elected on a ten-acre site owned by the company. The company will build its own power house and machine shop. C. H. Edwards is president and W. E. Greager secretary of the firm.

The Standard Brick & Tile Company of Portland, Ore., has installed some new machinery and made other improvements which enable them to increase the capacity of the plant from 40,000 to 60,000 brick per day. Among the orders the company is now filling brick is for the Oregon Institution

for Blind, the Shrine Hospital for Crippled Children and a big new school building.

L. D. Newman, commissioner of streets of Huntington, W. Va., is seeking prices on brick for street improvement.

C. M. Wofford and C. Wood has incorporated the Van Buren Brick and Tile Co., at Van Buren, Arkansas, with \$25,000 capital stock.

The McDonald Brick Company of Ludowici, Ga., wants to purchase a small steam locomotive. If second hand, must be in good repair.

The Northen Clay Products Corporation has been incorporated at Wilmington, Del., to manufacture clay products and sanitary ware. The company is capitalized at \$1,000,000.

The Panhandle Brick & Tile Company at Cliffside, near Amarillo, Texas, is now building its sixth kiln which is to have a capacity of 50,000 brick. The company burns with natural gas.

Andrew Rollo has started work on his brick plant at Cedar City, Utah. Mr. Rollo has a number of orders on hand which will keep him busy for some time, and the prospects are good for the entire season.

W. M. Layton, president of the W. M. Layton Brick Company of Four Oaks, N. C., has announced that he has leased the plant of the Meadows Brick Company and will operate it. The plant has a daily capacity of 40,000 brick.

Application has been made by Alexander L. McVicker and B. E. Teeple of Monongahela City, Pa., and James M. Purcell of Donora, Pa., for a charter for a new clayworking concern to be known as the Young Clay Manufacturing Company.

The new plant of the A. & W. Cooper Brick Company at Marine City, Mich., was started up the latter part of May with a capacity of 60,000 brick per day. The plant is equipped throughout with up-to-date machinery and appliances.

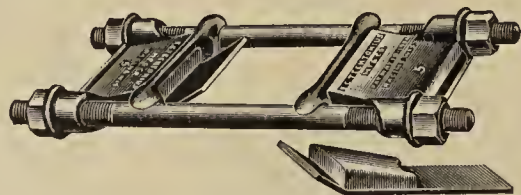
The Southern Oregon Clay Products Company has started work on their new plant at Central Point, Ore. Dr. Sweeney, of Medford, is president of the company. F. B. Hanks, formerly of San Jose, will have charge of the manufacturing end of the business.

The Clayton Brick & Tile Co., Clayton, Iowa, has been chartered to manufacture and deal in brick, roof tile, sewer pipe and other clay products. The company is capitalized at \$250,000. F. A. Henker is president, W. H. Meuser, vice-president, and Richard Klock, Jr., secretary and treasurer.

The Alcoa Brick Company's plant at Alcoa, Tenn., which began operations just a year ago has been in continuous operation and is now turning out 1,000,000 brick per month. They make a high quality hard shale brick, both in rough texture and a rug brick. V. J. Hulquist is manager and L. P. Collins superintendent of plant.

The Duncan Machinery Company of Knoxville, Tenn., wants prices on 50,000 capacity per ten hour day brick machine, stiff mud type, second hand or rebuilt, for immediate delivery. Also one set of single rolls for handling shale that is damp, for manufacturing brick with daily capacity of 150

PROTECT COSTLY KILNS—



TECKTONIUS
Kiln Band Fastener

—with the world's best band fastener, the famous wedge-action Tecktonius Lug. Read What Users Say: * * * "We could not be induced to use any other" * * * "We are through experimenting, we are using Tecktonius" * * * "Most satisfactory lug on the market" * * * Have used your lugs for thirty years—no expense for repairs" * * * We are using 476 of your lugs and are placing an order for 100 more".

Add years to the life of your costly kilns. Make your bands effective. Send for our catalog and price list—today.

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U.S.A.

tons, shale 1½ to 2 inch finished stock for manufacturing brick.

The Roanoke-Webster Brick Company is the new name of the Roanoke Brick Company of Roanoke, Va. D. J. Phipps is president and J. C. Haley secretary of the concern.

The Athens Fire Brick Company has been incorporated at Athens, Tex., with a capital of \$25,000 and with C. D. Greggs, T. A. Bartlett and A. S. Coke as the incorporators.

T. F. Moreau is at the head of a company which will erect a brick and tile plant at Danville Junction, Maine. They expect to start the plant with a capacity of 30,000 per day.

The Cushing Brick Company has been incorporated at Cushing, Okla., with a capital of \$25,000 and the following incorporators: John B. Bellis, Amos Brandenburg and James M. Dale.

The Stevens Pyrites Pressed Brick Company of Tampa, Fla., which was recently organized, has purchased a tract of land near Sulphur Springs on which they will erect a plant with a capacity of 60,000 brick per day.

The Torrance Brick Company of Long Beach, Cal., has incorporated for \$250,000 with George M. La Shell, Laura M. Le Shell, W. G. Reed, Rose Reed, all of Long Beach, and V. T. Pullman of Torrance, as incorporators.

The Standard Clay Company of Empire, Pa., has been chartered with a capital of \$100,000, to mine and sell clay as well as coal and other minerals. The incorporators are Fred W. Stone, M. G. Belt, C. G. Jones, Geo. S. Cotrell and R. R. Holmes.

L. L. Stephenson, who has been making face brick at Lovick, Ala., for many years, has incorporated the Stephenson Brick Company, with head office at Birmingham, Ala. His son, L. L. Stephenson, Jr., and W. Bowen Henderson, are associated with him.

A new brickmaking concern in Boston, Mass., is the Baldwin Brick Company, which was recently incorporated by George L. Baldwin, of Ayer, Mass., and George L. Weeks and S. R. Haynes of Boston. The company has purchased the plant of the Unit Brick & Tile Company at Littleton, Mass. They will improve the plant and bring the capacity of same up to 80,000 brick per day.

Al Ridgeway, employe of the Shepher & Moomaw Brick Plant at Sugarcreek, Ohio, sustained three fractured ribs and a badly crushed shoulder when he was caught in the pug mill at the plant. The accident occurred when Ridgeway's sweater caught on a line shaft and threw him into the mill. He was thrown over the shaft and the ribs penetrated through the flesh. He was unconscious and badly mangled when rescued.

A section of a kiln shed at yard No. 1 of the Duffney brick plant, located about one and one-half miles north of Mechanicville, N. Y. was partially destroyed by fire June 6. Two box cars on the railroad siding, partly loaded with brick, were also destroyed. Two of the firemen were slightly injured by falling brick. It is said that the damage will amount to about \$5,000. Oil is used for fuel to burn the brick, and it is thought that a leak caused the fire.

Hiram Swank's Sons of Johnstown, Pa., manufacturers of fire clay refractories are changing their plant at Clymer, Pa., to manufacture runner brick, sleeves, nozzles, etc. When the changes have been completed, the plant will be one of the largest of the kind in the country. Ralph F. Swank as President of the company reports his company will be able to care for the demand of the kind of refractories manufactured at the Clymer plant for the entire country.

F. N. Cameron was re-elected president and a director of the Utah Fire Clay Company at the annual session of stockholders in Salt Lake recently. Not only that, but all of the other eight directors were re-elected, and then the directors organized with the same official staff for the coming year that was in charge during the year just closed. Officers and directors of the company now are: Mr. Cameron, president and director; A. E. Kimball, vice-president and manager; J. A. Groesbeck, treasurer and director; H. R. Waldo, secretary and director; L. S. Cates, Waldemar Van Cott, D. D. Moffat, Edgar S. Hills and W. L. Biersach. All except Mr. Biersach are Salt Lake men, and he has his residence in Provo.

The Mason Creek Tile and Brick Company has been incorporated at Roanoke, Va., with a capital of \$25,000, and with F. W. Garrett as president and D. C. Graybill as secretary.

E. J. Wassell, I. A. Wassell and F. A. Mathieson have organized a company at Glenville, N. Y., to manufacture brick. A plant has been erected and the first brick were turned out June 15th.

L. L. Stephenson, Sr., and associates recently organized the Childersburg Brick Company at Childersburg, Ala., with \$250,000 capital stock. They will manufacture a high-grade face brick.

Taylor Jackson, manager of the Dallas Pottery Company of Dallas, Tex., announces that his company has purchased a site at Love Field and will erect an immense plant for manufacturing flower pots, vases and the like.

The city of Woodward, Okla., will use more than six million brick in the erection of six brick well houses for water works improvement and is receiving bids for this and other extensive materials for the construction of the plant.

The Richmond Pressed Brick Company, with headquarters at San Francisco, Cal., has purchased a site adjacent to its present location which will enable it to enlarge the plant. The purchase price is given as \$30,000.

The Thress Brick Co., Tuscaloosa, Okla., is making a number of improvements at its plant, including the building of three additional kilns, each with a capacity of 150,000 brick. The company contemplates building three more kilns before the summer is over.

At the recent annual meeting of the stockholders of the Savage Mountain Fire Brick Company, Frostburg, Md., the following officers were elected; President and Treasurer, John A. Caldwell, Vice-President, N. G. Caldwell; Secretary, W. F. Caldwell; Superintendent, G. A. Shuckhart; Assistant Secretary, G. R. Harvey. The officers constitute the directorate of the company.

The Connecting Link—

To greater efficiency in any sliphouse between blunger and filter press is the

MUELLER PUMP

Mechanically correct in construction, never-failing in operation, and daily performing in many potteries, both large and small throughout the country, this pump can help you increase *Your* production.

*We will gladly tell you how.
Write to-day.*

The Mueller Machine Co., Inc.

Trenton 25 Ward Ave. New Jersey

Written for THE CLAY-WORKER.

MISSOURI HAPPENINGS.

THE CHAMBER OF COMMERCE of Mexico has started a movement to secure a fund for the erection of a fitting memorial in honor of the memory of J. A. Glandon, who died recently, and who, at the time of his death was vice-president of the A. P. Green Company of Mexico, and a number of other business enterprises. The A. P. Green Company has announced that it will start the fund with a substantial amount that will be raised among its employes and officers voluntarily. No subscriptions will be solicited. The memorial will be practical and may take on the form of drinking fountains in the grade schools of the city.

The Fulton Fire Brick Company is erecting a structure at its plant in Fulton, that will be used as a dry room and when completed will increase the capacity of the plant 20 per cent.

L. U. Nickell, of the official family of the Fulton Fire Brick Company, of Fulton, Mo., who is summering at Detroit, Minn., has just sent a photograph showing 50 wall eyed pickerell and with Mr. Nickell seated in front of them. He insists it is a one day's catch and that the total weight of the fish is 75 pounds.

Paul Albenello, 29 years old, died in the St. John's Hospital in St. Louis, June 10, from the effects of injuries received in the explosion of dynamite used for blasting at Mine No. 5 of the Evans & Howard Fire Brick Company, at Longfellow and Spring Roads, in St. Louis county. Fellow employes said that Albenello attempted to set off three charges at the same time and two exploded. After waiting 20 minutes Albenello went to see why the third failed to do so. It exploded as he began to make his investigations and he suffered severe internal injuries.

H. M. Rotrock, representing the Alton Paving Brick Company of Alton, Ill., recently gave the city council of Louisiana, Mo., some valuable information in respect to some extensive paving that the city contemplates doing in the future by carrying with him a cross section of sample paving that he told the city officials would prove satisfactory in their improvement program. Rotrock brought the sample in an automobile and displayed it at a meeting of the council. The councilmen declared that it gave them a very intelligent understanding of paving and a vote of thanks was extended to Rotrock for his original idea. The paving that Rotrock carried with him consisted of a concrete base of about 4 inches in thickness, a sand cushion of one inch and vitrified brick, which were laid in with asphalt filling. The cost of the brick paving would be \$3.25 a square yard, Mr. Rotrock said, and would be guaranteed for fifty years and that it was being used extensively in Springfield, Ill., and Des Moines, Ia. The city of Louisiana has engineers at work making estimates and drawing up plans for the proposed paving of some of the principal downtown streets and when this work is undertaken Louisiana will have the first paved streets in its history. Property owners and citizens generally are said to favor the project and it is believed almost certain that the paving will be done.

Bob Walsh, head of the Walsh Fire Brick Company, which has a plant at Vandalia, Mo., took twenty of his executives and salesmen and went to Mexico, Mo., where they were the guests of the A. P. Green Fire Brick Company. They were entertained at lunch at noon by the Rotary Club and a number of the Green executives and office workers joined the crowd, there being a general discussion of the brickmaking industry.

J. W. Gallaher and associates of Mexico, Mo., have pur-

chased the plant of the North Missouri Fire Brick Company at Farber, Mo. It was announced that the purchase price was \$18,000. Mr. Gallaher said that they would continue to operate the plant. About 40 men are employed by the company.

The A. P. Green Fire Brick Company of Mexico, Mo., has adopted a plan of making room in its two plants in this city for high school boys of Mexico, who desire to make money through the summer months and the firm began to put on this class of labor last week. Many of the boys are finding work that is suitable for them and which they can handle, enabling them to make good wages during the summer months. The company has found the boys reliable and trustworthy and real good help. Some of it is day work and some of it is piece work.

—MISSOURI.

SOUTHERN BRICK MEN ASKING LOWER FREIGHT RATES.

John W. Sibley, manager of the Birmingham Clay Products Company, Birmingham, Ala., headed a company of brick and tile manufacturers of Birmingham and vicinity who went to Atlanta, Ga., to attend a hearing on a readjustment of rates of clay products in and out of the Birmingham district and other Southern points. The clay men claim that some time ago in a readjustment of rates on tile to conform with those on brick, instead of lowering the rates on tile to conform to the brick rate, the rate on brick was raised to the level of that on tile, and they now wish to have the rate lowered to the original rate on brick. According to Mr. Sibley, they are now paying 300 per cent more on brick from producing points in the district to Birmingham than prior to the war. The rate for years was 75 cents. Now it is \$2.25 per 1,000 and they wish to raise it to \$3 per 1,000.

It is understood that if agreement is not reached with the railroads the clayworkers will appeal directly to the interstate commerce commission.

"Practically all the brick plants are busy," writes Mr. Selby. "This includes common as well as face brick plants, and the paving brick works are also doing well."

FEATURING THERMOLITH.

THE HARBISON-WALKER Refractories Co., Pittsburgh, make a feature of Thermolith as the oracle of profit and loss in the boiler room in some splendid advertising literature being sent out. Thermolith is a fire cement of mortar prepared by this well known concern and put up in 200 pound drums in the form of a dry powder. It is confidently recommended for use in laying fire brick walls, boiler settings, blast furnace linings, gas regeneration linings, kiln crowns, etc.

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Trust Bldg.

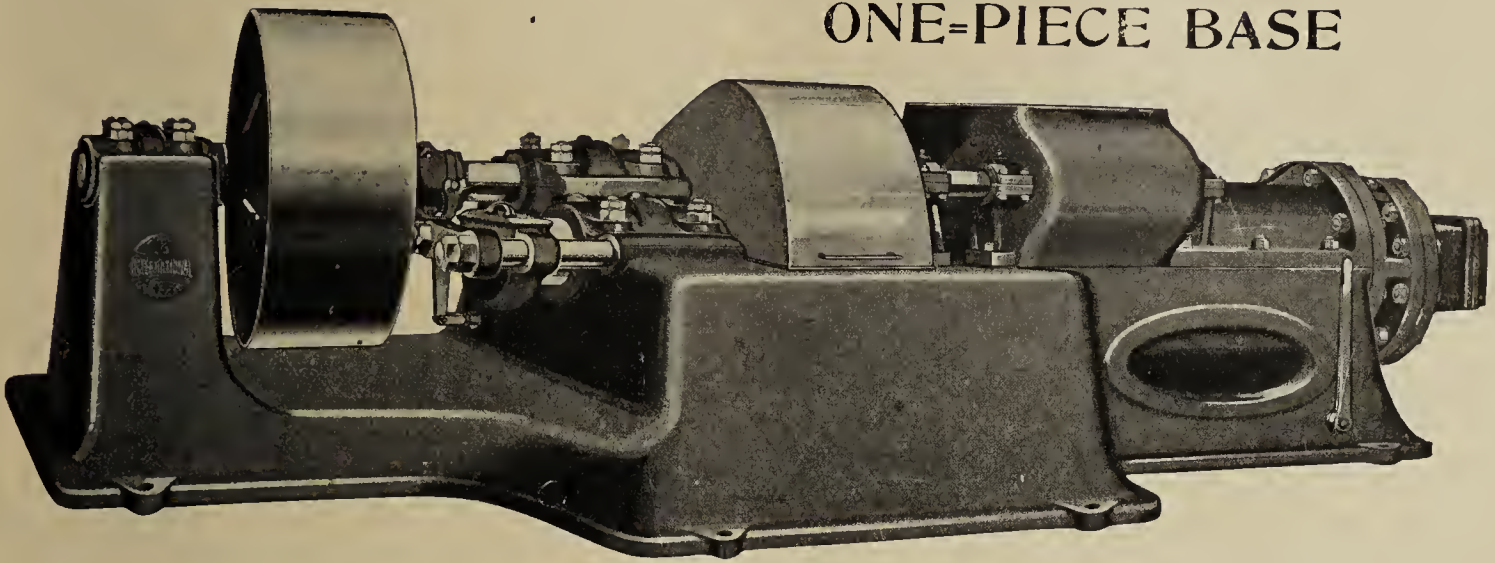
Hazleton, Pa., Office
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PATENTED

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ONE-PIECE BASE



Ask for Bulletin No. 30

DRYERS

METALLIC RADIATION
WASTE HEAT



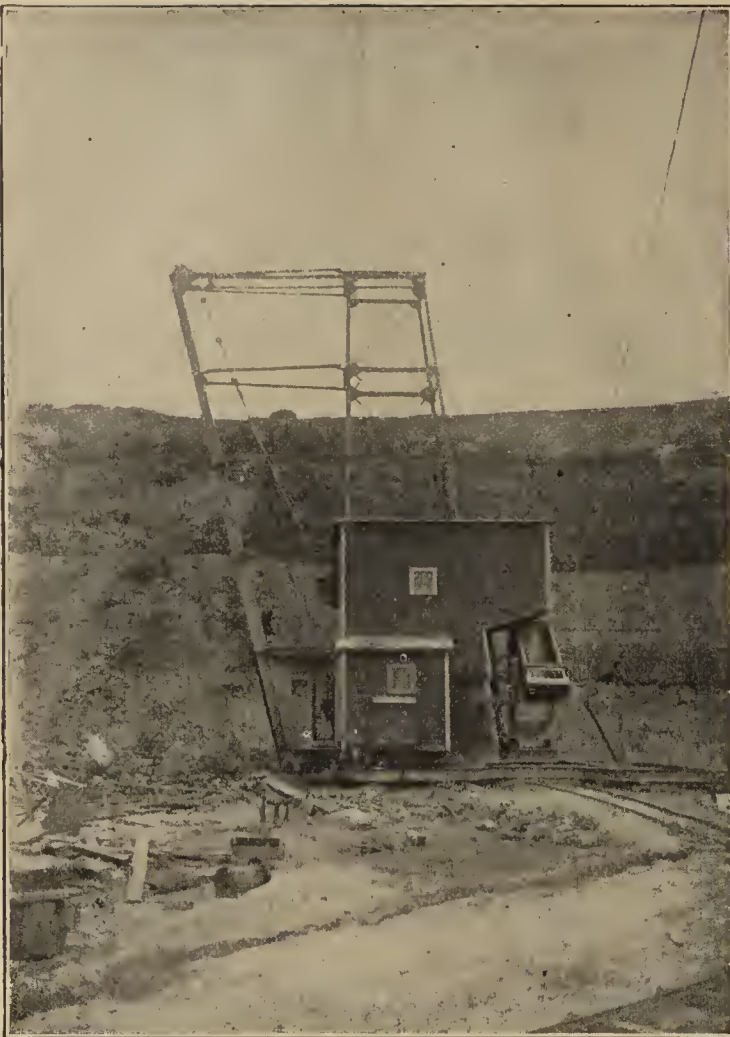
“More Radiation per foot of Tunnel.”

Ask for Bulletin No. 40

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Mention THE CLAY-WORKER



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

Written for THE CLAY-WORKER.

THE NEW YORK SITUATION.

DURING THE MONTH just passed, Hudson River brick manufacturers granted an increase to brick boat unloaders. The demand of these men was for an increase in wages of from 80c to \$1.00 a thousand. It now looks as if it is more profitable to be a brick unloader than to be a captain of a brick-carrier.

This increase undoubtedly will have the effect of spurring the men on to a greater effort and will tend to give better and quicker unloading facilities. As high as 100,000 brick have been unloaded by a crew of six men. With this wage increase there is the possibility of getting 150,000 unloaded. At the new rate for unloading, it would give each man, in a crew of six, \$25 per day.

Following closely upon this wage increase, and quickly calculating the possibility, the captains of brick-carrying boats put in a claim for \$160 per month. This is an increase of \$25 per month over their previous scale and includes their housing and other emoluments. When this proposition was handed to their employers, and before it could be considered, the captains proposed a counter-proposition to the effect that they be paid \$90 per month, and allowed to participate with the men in unloading.

This situation of brick handlers has offered all those in any way connected with the building industry the best opportunity in years to get away from the dominating influence that this class of labor has had upon the industry generally. The opportunity arrived to put the responsibility of unloading entirely up to a permanent organization to be maintained by the building material dealers. The golden opportunity was missed, as the material dealers explained, because the retail building material business has been without a head since the Lockwood investigation. At present no one dares to confer upon anything that tends toward unity of action.

For a time it was feared the tension of \$20 brick would give way, as it was stated "When the yard men heard what the unloaders are getting they will also want an increase." So far this tension still exists and there is yet to be had \$20 brick. Concern has been felt regarding a price shift upward toward the 1920 levels, as there have been appeals for legislative investigating committees and general protests and various allegations charging profiteering.

Regarding legislative committees, they can not supply brick when sheds are empty, and as New York is willing to pay almost any price to get deliveries, there is not a very great opportunity for a slackening in supply due to this cause.

Should manufacturing stop as a result of general brick yard strikes, the construction industry in New York must stop and can proceed only so fast as brick can be brought in. This holds good in other commodities as well.

The comments made by those up in the industry are to the effect that "there was nothing else to do but to meet the demands of labor." These excessive wages must be passed on to those whose commitments and obligations demand completion as soon as possible of the projects they have started.

According to some of the largest brick distributors in the city, it is said there is no price movement to be anticipated in the upward direction under present conditions. The market is being supplied with brick as fast as it comes in and outside of an actual shortage or scarcity of this commodity within the next two or three weeks, a price change

(Continued on page 708.)

Save \$30,000 on First Cost of Kilns

The average periodical plant of 50,000 brick daily capacity requires at least 15 kilns. The Minter System Plant is producing the same quantity and of a better quality in every case with only 9 kilns.

15 periodical kilns at \$5,000 equals \$75,000

9 Minter System Kilns at \$5,000 equals 45,000

A saving in first cost \$30,000

Save \$14,500 on First Cost of Dryer

Records show that the average periodical plant requires two tunnels to dry as many brick as The Minter System does with one tunnel. The Minter System cuts the first cost of dryer in half, and this on a 50,000 capacity plant would mean a saving in first cost alone of at least \$10,000. With half the number of tunnels required you save half the number of dryer cars needed. The Minter System saves in first cost of dryer cars nearly \$4,500 over other types on plant of 50,000 capacity. Here is a saving of nearly \$14,500 in first cost alone.

Save Nearly \$45,000 on First Cost Alone

By adopting The Minter System of Drying and Burning you save in first cost alone nearly \$45,000, and in addition you get advantage of better quality and maximum of fuel economy, for you use but little more than half the number of kilns and dryer tunnels and can use cheap, inferior fuel.

We Can Prove Them

These are broad statements. We back them up. We can prove them to your entire satisfaction.

DON'T BUILD UNTIL YOU INVESTIGATE THE MINTER SYSTEM.

Write for complete details and plants using our system.

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Clay Glazes and Enamels

By Henry R. Griffen

A book devoted to the glazing and enameling of brick, terracotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.

It contains 12 Chapters treating the subjects:

Historical and Introductory.

Selection of Clay and Mixtures.

Preparation of Clay.

Methods of Making the Blank.

Repressing.

Slipping, Glazing and Enameling.

Recipes.

Preparation of Slip, Glazes, etc.

Dipping and Cleaning.

Setting and Burning.

Majolica Glazes and White Enamels.

Bathtubs, Sinks, etc.

The book also contains a supplement on the subject of Cracking, Its Cause and Prevention.

Price \$5.00

T. A. Randall & Co.

Publishers Indianapolis, Ind.

THE SITUATION IN NEW YORK.

(Continued from page 706.)

is very remote, with the possible exception that manufacturing costs be arbitrarily advanced due to heavier demands by yard laborers.

Future orders are not being taken, to speak of, owing, no doubt, to this uncertainty but the general feeling is to match the gauntlet laid down by the New York building craftsmen and keep construction costs from going higher.

The present uneasy condition of labor and the inflated condition of the material market has been responsible for the withdrawing of important building projects from the contemplated list.

It is to be noted that several large operations for which plans had been drawn and completed, and the owners had anticipated releasing for estimates, have been temporarily placed in abeyance until such time as the situation has righted itself sufficiently to warrant going ahead. Under present outlooks, this period is quite far removed, and the effect of placing large projects in abeyance has not been felt, but as the speculative construction is completed, the withholding vast or large projects will be decidedly felt.

The demand for common brick is well sustained and brisk, despite the reports of considerable important construction held in abeyance until such time as material prices and wages for labor shall have become stabilized. The market generally shows extreme signs of activity, and the coming months bid fair for a continuation of this active condition. With speculative building going at a good rate of speed there will be a continuation of busy markets, is the consensus of opinion of many.

A total of forty-two barges arrived the first week in June, (just to show the number of brick to be distributed) and all were disposed of immediately upon arrival. More would have been taken had they come in. The price still remains \$20 wholesale at dock, and bids fair to be maintained at that level. Of the total number of barge loads received 25 percent stayed in Manhattan and 50 percent went to Brooklyn. The balance were distributed over the surrounding territory. Some went across to Jersey and some to Yonkers.

Face brick still shows splendid activity, even with the local building conditions in such a bad state. Orders for this commodity continue to be quite numerous. New inquiries are reported, but this part of the industry has slackened, due to the unfavorable conditions that surround the future. Face brick prices are holding exceedingly firm with little or no prospect of a recession from the levels prevailing at present. This will hold true only while labor and other manufacturing cost items remain in their present inflated state.

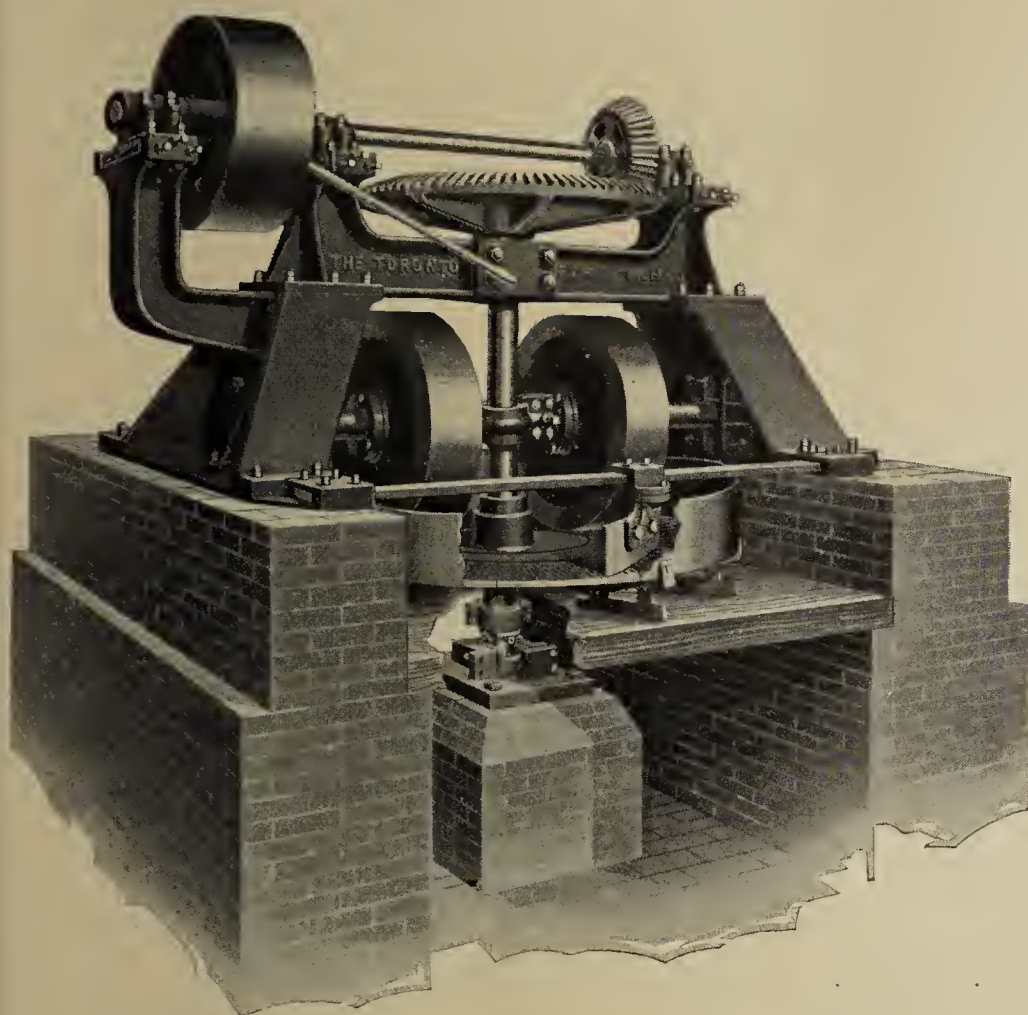
The prices generally quoted f. o. b. job site are Rough Red, \$42; Smooth Red, \$42; both Rough and Smooth Buffs, \$45; Smooth and Rough Grays, \$50, with Colonials at \$47.

A. L. B.

RETURNS TO FIRST LOVE.

Announcement is made that H. A. Garrison of Clarksburg, W. Va., has again become associated with the Thornton Fire Brick Company as sales manager and assistant general manager, with offices and display rooms at 908-9-10-11 Goff Building in the same city. Mr. Garrison was formerly with the company for a period of ten years, resigning about one year ago, since which time he has been manager of the Clarksburg office of Gano-Moore Coal Mining Co. of Philadelphia.

WHY COUNT FIRST COSTS ONLY



TYPE 'B' 10 FT. DRY PAN

When selecting new grinding equipment it will pay you to investigate the comparative cost for repairs. TORONTO pans will save you in the cost of spare parts more than the difference in first cost. This is an item well worth your consideration when installing a new machine.

**INSTALL TORONTO PANS
AND REDUCE MAINTENANCE
COSTS**

**THE TORONTO
FOUNDRY & MACHINE CO.**

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Written for THE CLAY-WORKER.

NEWS FROM DIXIE LAND.



HILE JUNE IS very active in brick and all construction lines in the Mississippi Valley, a slight falling off in building is reported over what it was a month or two ago. Yet there is enough work in hand to keep the builders busy this year and next, and many new contracts are being let from day to day. The brick manu-

facturing concerns, the sewer pipe and terra cotta and pottery industries are all quite busy. The last thirty days has witnessed an unusual amount of summer rain and this has to a small extent retarded work. Permits at Memphis for the first five months of 1923, greatly exceed those of the corresponding period of 1922. Atlanta even makes a fine record.

New Orleans and up state construction in Louisiana is very large. Hot Springs, Ark., is rebuilding or preparing to rebuild from the fires and cyclones damage in May. The Arlington Hotel will be rebuilt on a much more pretentious scale than formerly in that city. Little Rock and Fort Smith are very active. Nashville and Chattanooga each report much building, numerous stores and residences, schools and printing establishments in the former city, the Soldiers' Auditorium and other big work in Chattanooga.

At Memphis at the present time work is going right ahead on four big tall buildings in the down town section. The Shrine structure is up to the tenth floor and will be finished by Sept. 1, with roof garden on top. Better progress is being made on this than any of the structures. The exterior is of white cream brick with terra cotta and stone decorative work. The structure will cost about \$600,000. The lower floor will be used for the Consolidated Railway ticket offices, the Masonic Temple will occupy part of the upper structure and offices the remainder.

Very good progress, too, is being made on the Tri-State Hotel. This fifteen story structure is now up to the fourth floor, to be completed early in 1924, after plans by Jones & Furbringer, of Memphis; Barnett, Haynes & Barnett, of St. Louis. Most of the exterior will be of brick with terra cotta and stone decorative work and there will be much fire proofing and tile on the interior features.

The twenty-two story structure of the Columbian Mutual Life Assurance Co., Memphis, has also started, the old Odd Fellows Building entirely removed and foundation work started. It is to be completed May 1, 1924, to loom to a height of about 300 feet, the highest structure in Memphis. This structure is designed by I. Albert Baum, architect of Chicago, and A. B. Boyer, associate. A structural steel frame, floored with reinforced concrete and walled with tile, outer wall and eight story tower will be surfaced with cream enameled terra cotta, with ornamentation of terra cotta and cast bronze. At night the tower will be illuminated, using concealed flood lights.

One of the biggest projects in prospect at Memphis is the new hotel to be erected by the Southern Hotel Co., incorporated a few days ago under the laws of Delaware, and that has acquired at a cost of about \$800,000 a large site on S. Second, extending between that street and Union Ave., and Third St. A twelve story structure of six hundred rooms will be built at soon as plans can be prepared.

A vast number of fine residences mostly of brick are under plan, among those announced today being one for Clyde Washburn, of Memphis, along East Parkway, on a lot 125x300 feet. Two-story English homestead, after plans by Architect J. Frazer Smith, Goodwyn Institute. Considerable Sewanee stone will be used in the exterior with trimmings of colored terra cotta, thatched roof of weather straw color. Around the house will run a terrace of gray quarry tile, with stone balustrade.

DIXIE.

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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No. 1

SPEEDING UP BRICK CONSTRUCTION

A Convincing Demonstration of the Mann Patent Trowel, With Which Brick Construction May be Increased With Decided Economy, Resulting in a Material Saving in Labor and Time, Thus Making More Brick Buildings Possible at a Lower Cost.

THE BEE OF HIGH WAGES with wings of minimum-hours, and legs of minimum-work-done, is buzzing around in all building trades. It is gathering a great deal of golden pollen and making real "honey" for the workers, but the owners of the industrial hives and those who foot the bills, the ultimate consumers, are getting very little of the sweetening portion.

The honey is not all in the comb. There is a lot of room in the industrial hive for more work but restrictions bringing principally high wages with little, if any, consideration for the degree of service rendered, have reduced greatly the efficiency of the workmen and curtailed a great amount of construction that should be done to meet the demand for buildings of all sorts, particularly moderate cost homes.

The bricklaying craft is a good example of the buzzing bee and the half-filled hive, but the industry of the bee is not exemplified in this instance. It isn't a case of filling the hive (the needs of the country today) but to do just enough work that will be satisfactory to a chosen few.

The restriction in labor organizations that a craftsman must follow his craft and do no work in any other, under the theory that a craftsman to be a skilled member of same can only devote his attention to that particular field—that a

plasterer must at all times be a plasterer, a bricklayer a bricklayer, and that if he only has a half year's work he must be paid for the full year's time and remain idle the remainder of the year—is a bugaboo that is hurting the building industry more than any other one thing.

It makes for unreasonable wages. To be sure this attracts others who would gladly work for less but they are hindered in doing so by the great power wielded by organized labor. There is a great shortage of

bricklayers. They get mighty attractive wages, and there is only one real reason why the construction industry is not flooded with help under present conditions—that is restriction.

With the thousands of immigrants pouring into Ellis Island recently to be examined before being permitted to



The Helper Spreading the Mortar With a Mann Trowel, the Bricklayer Laying the Brick. It is Astonishing How Rapidly the Work Progresses.

enter this country, came a fairly good demonstration of what foreigners think of wages paid here. The first alien to be examined from among the thousands on the eleven ships arriving July 1, was Cesare Litterini, eighteen years old, of Trento, Italy, who said he was a laborer and had a brother living in New York working as a bricklayer and getting \$12.00 per day which he admitted was the lure that brought him to America.

In New York the unmarried men get \$12.00, but the married men get \$16.00 per day. They say they can not live on less. It is the old argument again that they only work at their trade during a portion of the year. The idleness the remaining months no doubt breeds shiftlessness and an unbalanced sense of their importance to the world in general. Why shouldn't a man work throughout the year? There are plenty of good jobs open when weather conditions stop work in their craft. There is no real justification for paying a man a full year's salary for half a year's work. Then too, if wages were lower, the bricklayers would have a longer work period than otherwise for there would be some



First, Lubricate the Trowel by Dipping it in a Bucket of Water.

incentive for the builders to build in the off season. But this is only one phase of the trouble.

The all-around restrictions hurt everybody outside the craft and if the Unions only knew it, hurts the workers themselves. The sharply defined requirements of apprentices attempting to enter the trade, the restriction as to hours worked, the number of brick laid and that the fastest worker must slacken his pace to that of the oldest or slowest man on the job, are some of the hindrances in our getting back to normal conditions, and efficient work wherein a dollar's worth of service is rendered for a dollar's worth of pay.

There is a great need for more and faster bricklayers. Six to seven hundred or even a thousand brick per day is not a very proud record for any industrious worker, yet the restrictions keep the rate of laying at about this average.

Bricklaying Schools Help.

We need more bricklayers! How are we going to get them? There are quite a few independent bricklaying schools that are doing effective work in training young men. The public schools in San Francisco, St. Paul, Minneapolis and other cities, have such independent trade schools, they are different from those schools directly or indirectly backed by the Bricklayers' Union which invariably requires three or four years' training and enforces the restrictions that the graduating apprentice must have the stamp of approval of

the organization before he can be recognized as a full-fledged bricklayer.

The independent schools that turn out bricklayers after a six month's course, are well worth while to help in the average run of work, they should be fostered and supported in a substantial way in every large community. In six months time these schools turn out skilled bricklayers with the old time trowel. But schools must be financed, instructors engaged and a definite program set forth. The financing is in many cases difficult and the training is slow work especially considered so where there is an immediate demand for a great number of bricklayers.

The Best Method.

There is a new, yet well tested method whereby bricklayers are made almost over night. The clay product manufacturers of the country should get back of it and push it for all they are worth. They should get it before their Chamber of Commerce, and every Manufacturers' Association in their State. It is a method that renders excellent service requiring a day or so in the learning. We refer to the Mann Patent Trowel. Hundreds are now in active service testifying to the great advantages this new method gives over the old trowel.

We do not advocate the abandonment of the old trowel. It is a useful and necessary tool, it is an instrument that is



Fill Trowel by Pushing it into the Mortar, Heel First.

needed in laying up particular artistic faces, but it should be replaced by the Mann Trowel in the average work and particularly backing up or straight wall work.

With the Mann Trowel the unskilled workman after only a few hours practice following correct instruction can more than treble the work done by the average bricklayer using the old trowel.

The Mann Patent Corner Piece.

The trowel should be used in connection with the Mann corner piece, a most practical and useful device that keeps each course properly lined up. These corner pieces consist of two upright wooden slats with edges placed at right angles held firmly with iron corner pieces, a space being allowed the entire length at the corner for a sliding block through which the line passes and is movable in its slot so it can be raised as each course is completed. Four corner pieces, set firmly on foundation, properly plumbed and propped, enables the work to be carried around the entire building before the line is raised, if such is the desire. These corner pieces are furnished with the trowels upon application.

Before taking up the exact work in the bricklaying, step by step after the corner pieces have been put in place, it is well at this point to give the reader some first hand information gleaned from personal observations made over a period of several weeks. The writer spent much time watching the erection of three two-story seven room houses built one after the other (not all three at one time) so that the observations were made in no haphazard fashion but with a critical eye, and with the Missouri idea of being shown.

The young bricklayer who had had previous knowledge of handling the Mann Patent Trowel averaged better than

will average 600 to 700 brick on solid eight-inch wall or 500 brick on brick veneer wall in eight hours. With the Mann Patent Trowel I noticed that the skilled bricklayer set 1,800 brick in 5½ hours and this included setting corner pieces, window frames and working around four openings, spreading mortar and setting the brick without any assistance.

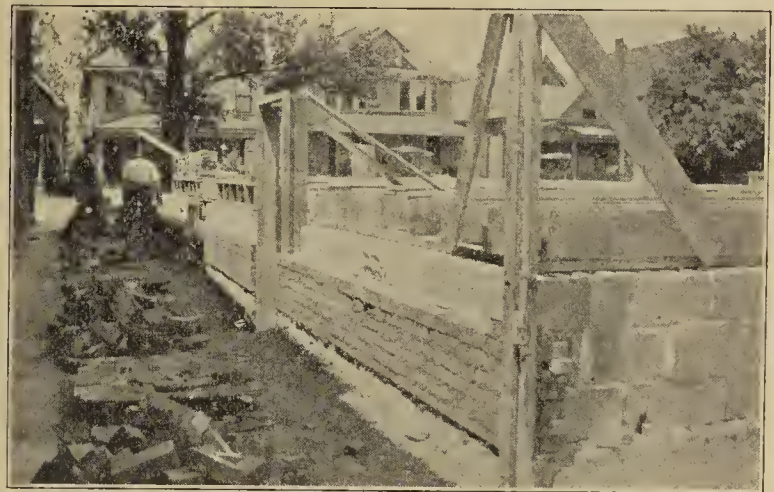
I watched him put a course of rowlock brick under four windows. This work was done in seven minutes. I timed him on a solid course of brick and found it was in keeping with time of other work considering difference in operation. In this case boards were stretched across back course of brick and the brick laid flat end to end on same the entire length. The mortar was spread with the Mann Trowel over the brick and one after the other picked up and placed in soldier course form in rapid succession, almost as fast as brick could be picked up. Of course the one spread of brick did not make the entire soldier course. The work was well done, even, and up to the standard of all regular trowel work.

This new trowel is a great time and labor saver, does the work properly, requires but a few hours in the actual learning and is so well constructed that it will outlive several times over the old trowel even with the extra usage.



The Mann Corner Piece by Which the Line is Kept True and Straight.

2,000 brick in less than eight hours. By actual count in working on face of wall where particular work was necessary 275 brick were laid with the help of a boy spreading mortar in the short space of fourteen minutes. This man alone fixing his line, spreading the mortar with the Mann Trowel and laying the brick averaged with apparent ease 300



Laying a Brick Veneered Wall with Backing of Cement Block.

The following description of the brick laying practice with the Mann Trowel should give the unskilled workman a clear idea of the handling of it and at the same time show wherein its speed and economy is obtained.

How to Use the Mann Trowel.

The Mann Patent Trowel can be used without the Mann Patent Corner Pieces in the old fashioned way of carrying line but the corner pieces give more accuracy and make for more speed.

Preliminary: Have your mortar boards at convenient places and see that the mortar is a little thinner than in ordinary practice. A bucket of water should be placed on the corner of each board, preferably on the right outside corner. The foundation should be level and the gauge line in place. The point for the start should be the left hand corner.

First: Dip the empty trowel into the bucket of water. This wetting lubricates the trowel, prevents mortar from sticking and allows mortar to flow from same with the freedom necessary.

Second: Turn the trowel with opening toward mortar and push trowel into the mortar heel first, from the mortar board upward that is, that portion nearest to the handle, so that the bulk of the mortar goes into the deepest part of the trowel. This takes the weight off the end of the



Spreading Mortar from a Window Opening; on the Opposite Side the Brick are Ready for the Mortar.

brick per hour. I counted and timed him as he laid 1,290 brick, working around three openings, setting coal chute and window frame. It took him exactly 4½ hours and this was done unassisted and included raking out and brushing off.

I watched an unskilled worker on the job, who had simply watched the regular bricklayer the day previous (practicing a little in the use of handling trowel with proper instructions) and was astonished to discover that he laid over 1,800 brick of inside wall construction in 3½ hours.

The average bricklayer gets \$30.00 per thousand brick counting wall measure of fifteen brick to the foot. There really are only eleven brick to the foot. The bricklayer

trowel putting all at the handle, making it less tiring to the wrist. Naturally with the load more on the point of the trowel nearly a foot from the handle the weight is a needless strain on the wrist. With the mortar in the heel of the trowel, that is the deepest part at the handle, the weight is hardly noticeable.

Third: In lifting the filled trowel shake slightly with point inclined upward, thus shaking off surplus mortar and keeping mortar more to the heel. The trowel should be well filled.

Fourth: When the trowel is an inch or so immediately over the point where the mortar is to be deposited invert quickly placing trowel flat upon the surface approximately one-half inch in from the edge of the wall and then pull along surface. Keep trowel in contact with surface until about two feet of mortar is thus spread in one operation, the length of the spread depending on size of trowel used. They

fit the space. The trowel in covering these brick will fill in the joints. The length of the wall, of course, should be such that the bricks work out even to the brick or half-brick, for if you have any small pieces of brick in the wall this undesirable condition will go on all the way up, thus making the work more difficult and the chances of a good job less favorable, and also requires a great deal of time in the breaking and laying of the brick. In breaking brick it is best to use a brick hammer. The Mann Trowel is too valuable a tool to use in this fashion though made strong and durable and will outlast a dozen ordinary trowels.

The trowel, in moving across the spaces between the brick, forces the mortar down into same and fills the space up completely. If your mortar should get stiff and under this condition happen not to fill properly the end joints, stick the point of the trowel down into the mortar thus forcing the mortar down as desired. This is seldom neces-



A Substantial Double Brick Residence Recently Erected on North Delaware Street, Indianapolis, All the Brick Work Being Done with the Mann Trowel.

are made in three sizes, the half-inch being preferred. A narrow trowel has been made for concrete block and hollow tile work. The same operation applies in both cases.

Fifth: Fill the trowel again and spread more mortar, beginning where you left off. Several trowels of mortar should be spread before brick are laid. However, if you have a helper for spreading mortar you can follow him closely with the brick, in fact, the brick can be laid almost as rapidly as the mortar can be spread.

Sixth: Place the brick lightly into the mortar, pressing slightly to make top of brick come even with the line. Leave about one-half inch opening between ends of brick. Always make about one-half inch joints, then the bricks will work out even in the average scaled house. If in approaching the corner you find there is space for less than half a brick and more than the half-inch joint, you can spread the brick out a little to make up the difference, or break the brick to

sary but requires only a fraction of a second. How different the work of the Mann Trowel is from that of the ordinary trowel, where the mortar must be picked up a little at a time, spread and scattered to the right thickness on the wall, then a brick picked up, mortar put on the trowel, a part then put on one corner edge of brick, then another part on the other edge, the brick then placed in the mortar on the wall and tapped and humored into the correct position. Think of the time wasted and the stooping and rising necessary to put on just one brick. The Mann Trowel in one movement spreads enough mortar for four or five brick and four or five brick can be picked up at one time and placed in rapid succession, one after the other, onto the mortar and with no tamping required, for the exact uniform thickness of mortar is made constantly by the Mann Trowel. The filling of the spaces as the Mann Trowel passes over the brick is a great time saver over the old method of

scraping mortar on either edge of the brick and there is a great saving of mortar also by the new method.

Seventh: Working from a right hand corner or opening, the filled trowel can be pulled back with either right or left hand as found convenient. When the mortar is spread up to within a few feet of the corner or opening for window, door or chute, it is best to spread the remaining mortar needed from the corner or opening back to and joining the other mortar before brick are laid. A few minutes practice makes this operation very easy to the beginner.

Eighth: Don't pay any attention to the raking out of the joints until the day's work is completed. The time for pointing up the job depends upon condition of the brick and mortar. If they are dry and you have used cement in the mortar the mortar sets more rapidly but ordinarily all brick work should be raked out the same day. To point up a job get a piece of plastering lath about one to two feet long. This is a good tool, for one stroke rakes out the joint to about the correct depth. To straighten up if some joints are not well filled, take a little of the mortar that has fallen on the ground or scaffold and place in the open space and smooth down with the lath. Another good tool to

Twelfth: In making soldier course place one inch boards along entire length of back brick in wall. Fill these boards with brick flat end to end close together, then with the Mann Trowel cover with a layer of mortar then spread a course of mortar on wall where brick are to be placed and take brick from boards one at a time and stand on end in the wall keeping top of brick to line made with brick placed upright in each corner piece. With the mortar put on the brick in this fashion the joints between the brick in the soldier course are always the same and the work can be done in a most rapid manner.

Thirteenth: You can make more speed by using the Mann Patent Corner Pieces for they keep the rows straight at all times. One sets on each corner of foundation and are one or two stories high as desired. With the corner pieces, start by laying the brick in the corner of the corner piece and then go around the building with each layer of brick placing chutes, frames, etc., when you come to their locations. The line in sliding block in corner pieces slides up for each course and you have a tight line at all times.

Hundred's of Mann Patent Trowels are now in use testifying to the great advantages this new method has over



Laying Brick With a Mann Trowel. On the Right a Trowel of Mortar Which When Reversed Deposits the Mortar on the Brick. On the Left the Mortar Spread by a Backward Motion Filling the Joints Between the Brick and Leaving an Even Depth of Mortar for the Next Course of Brick

point up the job nicely and quickly is a piece of two by four about a foot long. Run it backward and forward, endways with the edge of the two by four raking out the mortar until it is smooth. This makes a V shape in the mortar.

Ninth: In placing window frames, or coal chutes, adjust them so there won't be any small pieces of brick smaller than half a brick necessary, for as stated previously if you have small pieces of brick in the wall, it goes on all the way up. If the building is the usual size wherein brick come out even and the openings are standard, there will be no difficulty in this connection providing, of course, you adhere to the sameness in the brick spacing.

Tenth: Always have the concrete or foundation level to start with for as the mortar is the same thickness the rows of brick will remain level. In laying brick remember to lay them down lightly being careful not to push them down on either end for if you do it will make a bad job. If you are using clay brick and they are too dry, wet them a little so as to keep the mortar from setting too fast.

Eleventh: In setting rowlock, the mortar should, of course, be spread on both front and back brick in two separate layers.

the old trowel. The wide circulation of the merits and benefits of this trowel will revolutionize the brick laying trade and result in more brick construction and consequent benefit to the brick layers, the brick industry and the home builders of the nation.

The two views shown on this page afford a most interesting object lesson. They show the bricklayer spreading the mortar from right to left in one case, and from left to right in the other, and it may be observed the joints between the brick are filled from top to bottom as the mortar is spread with the Mann Trowel. This stretch of wall of 1,290 brick was laid with a Mann Trowel with one man unassisted in four and one-half hours. This included setting the corner pieces, working around three openings and raking out the joints, and as the pictures show it is a very satisfactory piece of brick work. It is doubtful if the most skilled bricklayer could lay this same stretch of wall with the old trowel in much less than ten or twelve hours.

The use of the Mann Trowel should be taught in all brick-laying schools. Every brick manufacturer should start the ball rolling in his own community, and bring the trowel to the attention of contractors and builders, and commercial bodies interested in speeding up building in their respective localities, that we may build economically.

J. E. R.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Six. WAGE SYSTEMS.

Previous discussions have established the need for proper material records. We have considered the advantages and disadvantages of various forms and finally decided on the kind best suited for clayworkers. Even more important are the records of salaries and wages paid, since this element of cost provides the largest variation in the cost of clay products. Furthermore, it is necessary to keep accurate records of wages earned, so as to make sure that each man employed gets the pay due him.

The cost of labor for the same work may vary widely. For example one plant, manufacturing fire brick may require a gang of men, in attendance at all times. In case of breakdowns or long delays, this gang must be paid for its time. The labor cost for this operation would therefore be higher at certain times. The basis of all production costs is the length of time it takes to perform an operation, that is, the length of time it takes to make, dry and bake one brick. This record is

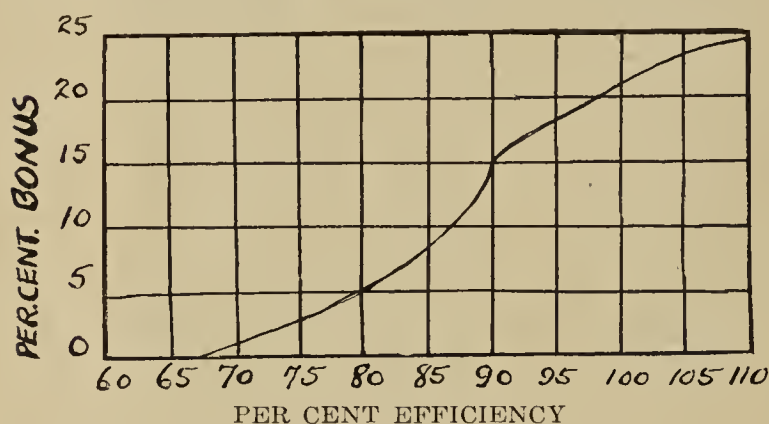


Fig. 1. Emerson's Task and Bonus Chart. Worker is Rewarded for Performing the Assigned Task or Exceeding it, but is Not Penalized for Falling Short.

rather difficult to obtain especially in plants that have to mine their clay by manual labor.

To increase the efficiency of the individual worker, it is first necessary to know how much a man ought to do in one day. Once this standard is established, it can always be held up to him as a goal, which he must try to reach.

However, the employee, being a human being, must be treated as such at all times. The employer wishes to get him to produce more because he believes the man has not been doing his best. The way to bring about this condition is not to drive him like a mule, but to offer incentives, based on the principle that the man should be paid for the work he does. This can be accomplished only by offering the man such pay as will enable him to live. The question of incentives will be taken up as soon as we have examined thoroughly the various methods of wage payment possible in the clayworking industry.

There are two bases on which this time can be paid for. The first is to give a standard reward for the time itself; the

second is to pay for the number of units produced within a given period of time.

The first method, that of paying for the time itself, regardless of the work done is usually known as the day-wage payment method. In it the workers are paid by the hour or by the day. In this case the man is paid for every hour he works, regardless of the amount of work he produces. This method offers no stimulus to greater effort on the part of the employees. It has the advantage of awarding the man only for the time he actually works. The time may be paid for by the week or by the month.

Objections to This Method of Payment.

The difficulty with the time payment method of rewarding labor is that there are no direct connections established between the amount of work done and the wages. If the demand for labor is great, as it usually is, during the busy season, the worker may soldier on the job, consequently any effort to blame him will be greatly disturbed by this factor

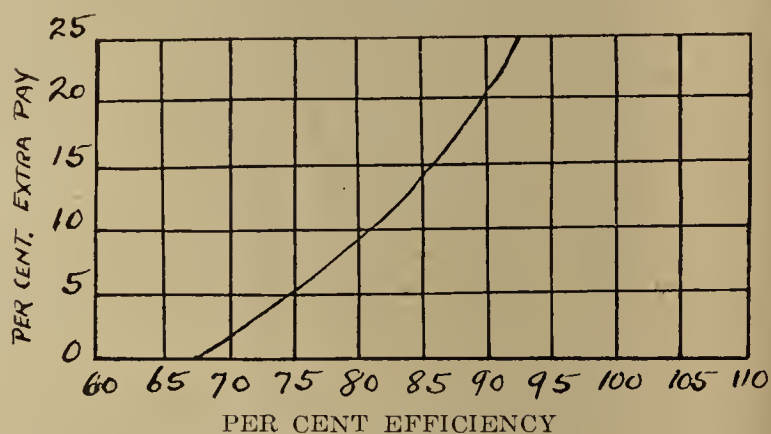


Fig. 2. Normal Piece Rate Chart. Note the Rapid Increase in Per Cent of Pay.

and the clayworker will find himself losing money, he had expected to make, simply because labor is not coming up to his expectations. Wherever the day work system is used, supervision must be proportionately greater because there is no way by which the man can be penalized for not doing his work properly, except by deducting money from his wages. This the law does not permit in most cases, and it is a clumsy method even if it were permissible.

The other method of paying labor is by laying a price on each unit of work he does, that is by the number of pieces or units he produces. This is a simple method, and wherever possible it should be used. However, the piece rate method has some disadvantages. In the first place most plant owners do not know how to figure their costs properly. They do not really know the cost of past labor and cannot determine with any fairness to themselves or the employee how much work a man can do in one day. The objection to this system is the fact that the employer is often tempted to cut the rate when he thinks his men are beginning to make too much money.

If the wage is too high to begin with it is the employer's own fault, since he does not know how to set the rate properly. There is nothing that antagonizes a worker more than to find his pay reduced for being conscientious.

One obstacle to the use of this system is the fact that the unions oppose it because they feel they can regulate production better by the day-wage system. By limiting production they can make the public and the employer pay for work they do not do. Under the piece-rate system, labor is the only one that suffers.

However, the piece-rate system is much better suited to brickmaking or any other clay operation, than any other method of wage payment. It is easy to apply and it will insure the employer's getting a definite return from his labor. It is fair to workers and it is the best way to make the most money. If the advantages to the worker are made clear, his opposition to the piece-rate system would soon disappear. This can never be done unless the employers give full assurance that no rates will be cut after they have been fixed.

What constitutes a proper day's work is hard to determine. First, it is necessary to adopt some method of measuring the individual efficiency of the worker. This has been accomplished in this and other fields quite successfully with the result that standards for individual efficiency are well established.

In 1895 W. Taylor of the Bethlehem Steel Company pointed out the possibility of increasing the efficiency of the worker by means of time studies. Taylor's plan was to surround the worker with a group of experts who would aid him in his work. All inspection was done by one man, supervision by another, etc. If a machine broke down the workers took their instructions from their maintenance men or repair foreman. This requires a good-sized organization, which most clay plants cannot afford.

The Efficiency Scale.

Those who come nearest solving the problem of labor control are men like Halsey, Thompson, Emerson and Gantt. By careful study these men arrived at an efficiency scale which has tended to stimulate the worker to greater effort without taxing his strength. They have determined that the average worker operates at about 67 per cent efficiency. For example, where clay is mined, a man may dig 20 tons per day, although he could be made to bring up his production to 30 tons per day without any additional effort on his part. Since this tendency to work at low efficiency is general, it is practically impossible to tell the worker to increase his efforts. Consequently some sort of incentive must be offered to induce him to do more work per hour.

The engineers mentioned above arranged a graduated scale of wage payments. This would produce additional pay for the additional effort required. But they did not pay him so much that he would stop working because he felt he had enough. Reverting to the illustration above, a man would be paid one cent per ton more for every ton over 20, and under 30, 2 cents per ton more for every ton between 30 and 35, 3 cents per ton for every ton between 35 and 40, etc. Having attained this point of maximum efficiency the bonus jumps up several points so that the man producing above normal is rewarded highly for his extra effort.

The difficulty with the above plan is that so much more must be paid for clerical help, that it hardly makes it worth while. Furthermore, if the union organization is very strong, the bonus plan will surely meet with the opposition of the union. Still it is absolutely necessary for the clayworker to have control of his production.

The foregoing discussion has not yet furnished the clayworker with a definite method for finding the unit cost and

the unit rate of production. It is customary to determine unit costs by the proportion of time spent on each operation by workers. If the operations are long it is easy to get accurate reports of the cost of labor. For example, in brickmaking, it is very easy to determine the unit costs because the time of making bricks and the labor expended can be evenly determined.

There are other methods that may be used. Time studies are the most scientific and the most accurate. For this method it is not even necessary to turn in time cards because each lot of work is automatically charged with the standard time as determined by the stop watch studies.

These studies are used as a basis for estimating cost for the first few months after a new system is installed. During this time the managers pay their workers on a fair basis for the foreman's daily reports of attendance. At the end of three months a new set of time studies is made and these are checked with the old sets for correction. By checking the time studies every three months any mistakes or errors are soon discovered and the standard time on a job becomes accurate.

This is an ideal system for the clay plant because it is easy to measure labor output by keeping record of finished products. Any of these methods might be used to maintain a set of time standards accurate enough to keep the clayworker from incurring a loss because of figuring his labor cost too low. Once the unit cost for labor is accurately established, it is very easy to get accurate operation costs.

(To be Continued.)

GOVERNMENT TESTS OF GEORGIA CLAY AT COLUMBUS, OHIO, STATION BUREAU OF MINES.

As the result of an investigation of the washing and utilization of Georgia clays, made by the Department of the Interior at the Ceramic experiment station of the Bureau of Mines, Columbus, Ohio, certain of these clays are being tried out commercially in the manufacture of refractories, floor tile, wall tile, face brick and electrical porcelains. The results obtained in most cases have been quite encouraging. Other clays will be given commercial trials.

In the course of the experimental work at Columbus, a new system of washing has been devised which has proved very satisfactory in the separation of the desirable and undesirable portions of the clay. Data have been obtained on a large number of samples of Georgia clays as regards color, shrinkage, fusibility, etc.

The Columbus station has been washing up to 500 pounds of certain of these clays which are later tested in the laboratory of the Tuscaloosa, Ala., station of the Bureau of Mines, and which will be tried out for use as filler material by commercial concerns. The mineral filler investigations have heretofore been conducted at the Tuscaloosa station, but was transferred to the non-metallic experiment station to be established at Rutgers College, New Brunswick, N. J., by the Bureau of Mines, July 1.

The new station at Rutgers College will undertake the study of non-ceramic problems affecting the various non-metallic minerals. Essentially ceramic problems undertaken by the Bureau of Mines will in the future, as heretofore, be concentrated at the Columbus, Ohio, experiment station. Some ceramic work which has been under way at the Northwest station, Seattle, Wash., will, however, be continued there.

Yes, there is a world revolution going on, and has been for some little time. This old earth has been revolving once every twenty-four hours for quite a number of years now.

SYMPOSIUM ON PRODUCER GAS FIRING.

W. D. Richardson, Columbus, Ohio.

PRODUCER gas is practically the universal fuel in the steel and glass industries and wherever high temperatures are required in all metallurgical operations. Its use in the clay industries in America has only just begun, though it was tried in a few plants many years ago, when knowledge of producer gas, its generation and application, was very limited and when fuel was very cheap. To be sure, the use of producer gas has been vigorously promoted in the past few years under a patent that was designed to give exclusive rights to use gaseous fuel and air under pressure in periodic kilns, though with specifications that were impractical. That such use of producer gas is practical, under certain conditions, has been well demonstrated by numerous installations, and credit is due to those who have persevered in these attempts. But in the other industries, mentioned above, producer gas is used in the only way that it can be used with any degree of fuel economy, that is with



W. D. Richardson, Columbus, Ohio.

recuperation and regeneration—the heating of the air for combustion and, where the highest temperatures are employed the superheating of the gas. It is with recuperation or regeneration, and in the ceramic industries, that this symposium is concerned.

Twelve years' experience in the use of producer gas in the burning of brick and tile has convinced the writer that it is the best and cheapest fuel, when properly applied, for the firing of clay products and is the most practical and reliable fuel for the coming years that we know of today. This presentation, however, is not for the purpose of expressing his own views on producer gas nor of giving any data from his own experience, but to bring to the attention of those interested facts and opinions from the experience of well-known men of technical knowledge and ability, in this country and in Europe, where producer gas is used more extensively in the clay industries than here.

From Bulletins of the Bureau of Mines we take the following statements:

Average Composition of Producer Gas from Bituminous Coal.

The composition of producer gas varies with the type of producer, the methods and skill used in operating it, the uniformity and regulation of the air and steam supply, the kind and quality of fuel used, the depth of fuel bed, the distribution of the fuel and the uniformity in the size of the fuel.

The average of several typical analyses of producer gas from bituminous coal at the Bureau of Mines testing plant and the average of the figures presented for plants in commercial operation is

Carbon Monoxide (CO)	22.34
Methane (CH ₄)	3.09
Ethylene (C ₂ H ₄)	.14
Hydrogen (H ₂)	11.98
Carbon Dioxide (CO ₂)	6.96
Oxygen (O ₂)	.32
Nitrogen (N ₂)	54.86

Heat Value of Producer Gas from Bituminous Coal

Average, as above, 151.5 B. T. U. per cu. ft.

Yield of Producer Gas.

Average quantity of gas from bituminous coal, as above, 68 cu. ft. per lb. of coal.

Comparison of Value of Natural Gas, Producer Gas and Fuel Oil.

1000 cu. ft. of natural gas contains about.....	1,000,000 B. T. U.
100 lbs. of coal, as fired in producer, about.....	1,000,000 B. T. U.
7.14 gals. of fuel oil	1,000,000 B. T. U.

Therefore, producer gas, with coal at \$5.00 per ton is equivalent to natural gas at 25c per M, and fuel oil at 7c per gallon.

No special search of the literature of the ceramic industries has been made for statements of the efficiency and economy of producer gas and continuous kilns. The quotations given below are from sources that are at hand and by men whose statements should command attention and be given serious consideration:

"We may finally remark that, for the industries using furnaces with the ruling temperature of 1000 degrees (C), with direct firing, it would be a decided advantage to replace them by gas-fired furnaces, for there is thus an economy of 30 per cent certain of realization."

E. Damour in Industrial Furnaces.

"Producer gas is by far the cheapest form of heat units in an industrial undertaking."

Dr. E. W. Smith, Trans. English Ceramic Society,
Vol. XX, Part I.

"I think that it can be safely said that gaseous firing can supplant any direct-fired process and when this is brought about it must necessarily mean economy in fuel, rising in many instances to very high limits; 50 per cent I think may be taken as a fairly safe figure."

"Then again, when using gas for the generation of heat in industry, it is very much easier—I am speaking now from practical experience—to control the working temperature of the furnace, and I think we all agree that accuracy of temperature control is most essential for any heat treatment. Not only that, but it is just as possible to obtain high or low working temperatures with gas firing, and temperatures of a wide range than it is when using ordinary solid fuel. In addition we must bear in mind the very important fact that our furnaces or kilns must needs have a longer life with gas firing. While not wholly condemning coal-fired furnaces, I do not think it should be possible to allow their use, except for temporary reasons and also in

very small instances where the first cost is the principal consideration."

"I think that where gas firing has been adopted the economy effected has surprised most people, and seeing that the need for obtaining as many B. T. U. as possible out of every ounce of coal that we possess is so very important for economical manufacture, it is up to everybody not merely to study the question, but to apply it wherever possible."

E. M. Meyers, Trans. English Ceramic Society,
Vol. XX, Part I.

"There is no doubt about it—that gas firing will save 50 per cent of the fuel that is consumed in a direct-fired kiln, apart from which there is a considerable saving also in labor. I would like to testify to the fact that, from a good many years' actual practice, it is our experience that there is no comparison between the cost of production or the quality of output of fireclay products when burned with gas, as compared with coal."

J. Dunnachie, ib.

"Gas firing is more convenient than solid fuel firing for recuperation or regeneration, processes which prevent the most serious losses of heat. By regeneration it is possible to take the heat from the waste gases and fired goods or pass the waste gases through other goods until they are cooled to 100 to 150 degrees C, whereas in firing without recuperation the gases leave the oven at the temperature of the firing goods. This from start to finish is calculated to average about 800 degrees C."

"As it takes a considerable amount of energy to convert solid gaseous fuel, it is not desirable to use gas and cold air. Gas is only advantageous with recuperation."

S. T. Wilson, ib.

"In regard to the advantages of gas firing, they may be roughly grouped under the following heads:

1. **Labor Saving.** To deal with burning the output of our kilns at present, we require only three men, each working eight hours shift, whereas for a similar output with Newcastle kilns, at least another man would require to be provided for one shift to wheel coal to and ashes from the kilns.
2. **Control of Temperature.** The heat at any given point in the burning and preheating zones is at all times under perfect and simple control, with the result that uniformity of burning is made easily possible.
3. The uniformity of burning reduces waste to a very low figure, and under or over-burned material is practically non-existent.
4. And by no means the least important advantage is that our experience has amply proved that fuel costs for burning amount to less than one-half of the cost of burning the same classes of goods to the same temperature in Newcastle kilns."

"The uniform appearance of the products drawn from the kiln is in their favour, and so firmly are we convinced that our class of material gas firing is the correct and most economical procedure, it is already decided that any future extensions of our kiln accommodation will follow broadly the same lines."

Mr. Richmand, ib.

"In the use of gas for the firing of kilns the gas producer itself, with all its incidental coal and ash problems, the dust and dirt arising from the handling of the coal and ash, can be far removed from the actual pottery kiln as to eliminate any dust and dirt contaminating the actual pottery under treatment. Further the gas producers can be located in the most desirable position with a view to reducing to a minimum the cost of handling the coal and ash. This, of itself, with the present high cost of wages is a matter of

no small amount. Further, there is no doubt that the use of gas will practically eliminate the smoke nuisance."

Wm. Bayliss, ib.

"Everybody I think, sooner or later, will have to come, if not to gaseous firing, to recuperative or regenerative firing. Of that I do not think there can be any question. For my own part, any further extensions to kiln plant that I may contemplate will undoubtedly be of the continuous type, and probably gas fired, for the reason that the gas-fired kiln offers greater economies in labour, a much lower repair bill—so far as my own personal observations go—and, generally speaking, it enables one to lay out one's plant to better advantage."

Col. C. W. Thomas, ib.

"Personally I think there are points in favor of gas-firing other than the mere questions bound up with economy, although these, of course, are vitally important. With coal firing the control of temperatures and the control of time—which is an important factor—is not nearly so easy as with gas-firing. I think it is desirable, and certainly it should be worth while, to consider gas-firing because of the advantages it offers in the matter of control and because of the fact you can attain more readily to these higher temperatures that are becoming more and more incumbent upon us from year to year. I do not think we have heard the last of the temperature at which silica brick ought to be burned, and we have not heard very much at any time of the temperature to which firebricks should be burned. It may very well be that in the future the burning of all classes of refractories may have to be carried to higher temperatures than hitherto, and in that case I do not think there is any doubt that gas-firing will be found more suitable in many ways than direct-firing."

Lt.-Col. C. W. Thomas, Trans English Cer. Soc.,
Vol XXI, Part II.

"Producer gas is, in most cases, the cheapest fuel for glass factories. A direct-fired furnace, without any regenerating chambers, uses from 2 to 2½ pounds of coal for every pound of glass melted. In producer gas-fired furnaces I have seen coal consumption of 1-3 pound of coal per pound of glass, the furnaces having double regeneration, preheating the air and the gas. The last figure is not taken from a 'show test,' but from daily record tests."

F. L. Denk, Jour. Am. Cer. Soc., Vol. 3, No. 2.

"From here I went to Hoganas, where there is one of the largest concerns for refractory goods in Sweden. Their coal is not of good quality, the analysis they showed me gave 50 per cent ash. No English firm uses such a bad coal. The method they have adopted for their fuel is an interesting one—it is gasified in a producer."

Dogar Singh, English Trans. Cer. Soc., Vol. XXII, Part I.

"Developments and improvements have been continuously brought about, both in regard to the generation and application of producer gas, with the result that this gas is now generally accepted as the cheapest form in which we can obtain and apply gaseous fuel for most industrial heating and power purposes."

N. E. Rambush, in "Modern Gas Producers."

Believing that the above facts and statements are worthy of the widest circulation among manufacturers of clay products, I have compiled them for publication in The Clay-Worker.

W. D. RICHARDSON.

It is worth saying again that a good place to demonstrate the usefulness and beauty of your products is in your own plant and office buildings and home. Do a little practicing of what you preach about the use of clay products, and get busy with the Mann Trowel.



THE MANUFACTURE OF SEWER PIPE

UP-TO-DATE METHODS OF MANUFACTURING SEWER PIPE.

THE MODERN MANUFACTURE of salt glazed vitrified pipe and kindred products involves many technical and scientific processes which may be divided into the following stages:

1. Mining.
2. Preparation.
3. Molding.
4. Drying.
5. Setting.
6. Burning.
7. Glazing.

Mining—The clay is obtained by excavating in open pits or quarries, the overlying soil being first removed by drifting into hills and mining or by sinking shafts to the clay and mining. As coal veins overlie the clay beds both materials are frequently mined from the same workings.

Clays, due to the enormous pressures to which they were subjected during early geological formations, in their natural beds are of the solidity and hardness of the softer rocks, requiring blasting in their removal, and sometimes crushing of the larger fragments, preparatory to the next process of manufacture.

Generally the mines are lighted by electricity and equipped with modern appliances for mining and transporting the materials to the mills. In open pits and quarries the steam or electric shovel is very generally used.

Preparation—After removal from the mine the harder clays are placed in piles or open bins until broken down by the elements. This is known as "weathering." The clay is then pulverized in a machine known as a dry pan, usually eight to ten feet in diameter, having a circular bottom which revolves and which at the same time turns two large cast iron wheels called "mullers" symmetrically placed, and supported on the bottom of the pan. The "mullers" weigh from three to five tons each and are about four feet in diameter. The bottom of the pan is made up of removeable plates, solid under the wheels and perforated from the wheels outward.

The clay is crushed under the "mullers" and forced outward over the perforated plates through which it passes to bucket elevators underneath. These bucket elevators carry the clay to screens 40 or 50 feet above the dry pan over which it is passed. The fine particles pass through the screen to bins and the coarse particles, designated as tailings, pass over the screen and are returned to the dry pan for further grinding.

The fine particles, after passing through the screens, are conveyed to the wet pan which is very similar in design to the dry pan, differing, however, in having a solid bottom and wheels of less weight. Water is added to the clay in this pan and it is further crushed and tempered. In some plants a pug mill is used to grind and temper the clay. Before reaching the press it is necessary that the clay be thoroughly mixed and have the proper degree of plasticity and granular structure so that the pipe will have the toughness and structure required in molding, and to prevent excess shrinking during drying and burning.

Molding—From the wet pan the tempered clay is conveyed to the press by a moving belt and chute. The press has two essential parts, the steam cylinder and clay cylinder. The cylinders are arranged vertically, one above the other, the steam cylinder being the uppermost and the larger. The commonly used size being 48 to 52 inches in diameter for the steam cylinder and 18 to 24 inches in diameter for the clay cylinder. Their pistons are directly connected by a continuous piston rod which is moved by the admission of steam to the steam cylinder, thrusting it downward and pressing the clay through the die attached to the lower end of the clay cylinder. The clay is introduced in the clay cylinder automatically at each upstroke. The die is made of cast iron and is bolted to the clay cylinder by means of flange joints. At its lower end, it is so designed that the clay forced against it takes the form of the socket of the pipe. Above the socket former is a straight cylindrical portion of two or three inches which shapes the barrel of the pipe. Beneath the die a pipe table receives the pipe as it issues from the cylinder. It is supported by a vertical rod kept in perfect alignment with the center of the cylinder, and is raised and lowered by weights which may be so adjusted as to counter-balance.

After the socket is formed, the table is slowly lowered and the pressure still applied. The barrel of the pipe is formed as it issues from the press, the clay being squeezed between the bell and the die. When the proper length is reached the pipe is cut off, either by wire or automatic power cutters. The clay must be of sufficient stiffness to stand up under its own weight and for that reason three feet is considered the maximum length for pipe.

T's and Y's are made by hand, the spur and stem being cut and shaped from pipe taken from the press. The spur is cut from pipe of the required diameter, trimmed and mitered at the proper angle to fit the stem to which it is to be joined. It is fitted to the stem at the proper place

and plastered with especially tempered clay to hold it in place, after which operation, the opening in the stem of the branch piece is cut out to conform to the inside diameter of the spur. This is done immediately after the pipe leaves the press.

Traps, elbows and special shapes are usually made by hand in plaster molds.

All sizes of pipe, flue lining, wall coping, and segment blocks, are made with the same press by changing the die. One-eighth bends are made by drawing the pipe to the proper curvature as it emerges from the press.

During the process of pressing, the pipe is subjected to an enormous pressure. The pressure on the clay and the steam pressure are the inverse ratio of the areas of the clay and the steam piston respectively. The unit pressure on the clay piston is always a multiple of that on the steam piston. The steam pressure is generally about 140 pounds per square inch. This intense pressure makes the pipe of great density and hardness.

Drying—The pipe, on emerging from the press, is loaded on hand trucks and conveyed to the drying floors. Wooden rocker cradles are used for handling the larger pipe.

The drying space consists of three or five floors of large area in the mill, under which steam piping is placed. The presses are located to deliver the pipe from the press to the first and second floors, from which while green they are removed, by trucks and large power elevators to other floors for final drying. The radiated heat from the steam pipes above dries the top of the pipe first, care being taken that little drying takes place at the floor level upon which the pipe rests, because in the large pipe its weight would prevent shrinkage and cracks would develop under shrinkage stresses.

As soon as the top of the pipe is sufficiently dry and there is no danger of cracking from drying at floor level, the pipe is turned and left until drying is completed.

Setting—When dry, the pipe is lowered in elevators and trucked to the kiln. A crane is set up in the center of the kiln to handle the large pipe. The pipes are then set in circles from the walls to the center. Pipe from six to ten inches in diameter are set between the bags and in the first two circles next to the walls. These small pipe serve as a shield for the larger pipe which are set in consecutive circles according to size, the larger pipe being set in the center of the kiln.

The pipes are set with the spigot end down and the lower layer is placed on rings of unburnt clay, in order to take up the shrinkage strain. Usually eight feet is about the setting height. The pipes are set with the sockets touching, the smaller sizes being set inside the larger ones. There must be enough difference in size to insure a clear space between the two, otherwise the pipes will not have an even glaze. Elbows, traps and special forms are set on top. T's and Y's and other branches are set on top also, but may be set in regular columns. A block of cones for determining various temperatures is placed where they can be readily observed through the peephole. These cones are composed of clays which have definite fusing temperatures and fuse to a shapeless mass when these temperatures are reached in the kiln. In many plants pyrometers are used in conjunction with the cones to record the temperature at the various stages of burning. Test pieces are also placed in the kiln where they can be easily reached by a hook through the peephole.

These test pieces are removed at intervals and show the progress of the burning and the glazing.

Burning—After setting, the kiln is closed and the fires started. The round down-draft or "beehive" kiln is gener-

ally used for burning clay pipe. In this type of kiln the fire boxes are placed at equal intervals around the circumference, the hot gases rising from them through the bags on the inside to the crown. From the crown the hot gases are deflected downward through the pipe and through the perforated floor to the floor flues and thence into the main draft flues. The main draft flues lead to stacks, there being usually four flues to each stack.

The burning process is divided into three parts, water smoking, oxidation and vitrification.

Pipe dried at atmospheric temperature still contains an appreciable amount of moisture. This moisture is driven off during the low temperature or water smoking period. The outside shell of the pipe dries first, and great care is taken to maintain the proper heat for this process and prevent a rise in temperature to the boiling point for the steam thus generated would disrupt the pipe.

The stages of burning are not distinctly separate, but overlap each other to a certain degree. When the water smoking is completed the temperature is gradually raised to that required for oxidation. This oxidation includes the oxidation of the carbon, the oxidation of the ferrous oxide and the breaking down of the carbonates and sulphides. Practically all of this oxidation takes place between 800 degree F and 1400 degree F. All of the carbon must be oxidized before the outer surface of the pipe begins to vitrify, or the surface will be ruptured.

The oxidation being complete the temperature is raised still higher and the period of vitrification begins. In the average clay the first signs of fusing occur at about 1750 degree F. Vitrification is completed when the pipe reaches that stage of fusion, beyond which the pipe would be melted down to a shapeless mass.

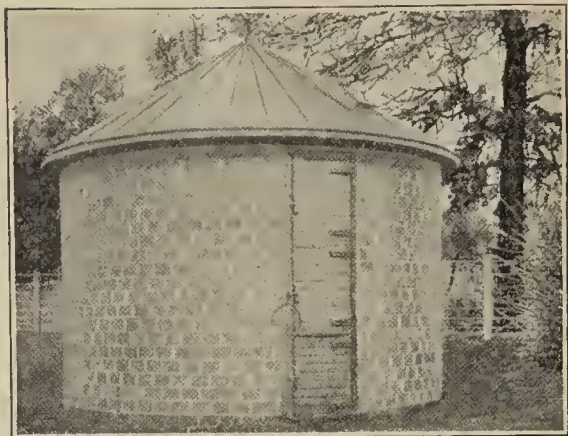
Glazing—With the majority of clays this maturing temperature is about 2300 degree F. When the vitrification is complete the pipe is prepared for salt glazing. In order to obtain a thorough glaze on the surface of a pipe it must be fire flashed. This is done by maintaining a reducing atmosphere in the kiln. The reducing action of the kiln gases keeps the iron minerals in the ferrous state or converts them from the ferric to the ferrous state and the iron readily enters into a silicate combination producing light brown to black ferrous silicates. When the ware has been fire flashed it is ready to glaze.

Common rock salt is used for the glazing. A shovelful is put into each furnace at each round of salting, the heat decomposing the salt into sodium and chlorine. The sodium combines with the silica and alumina present to form a sodium silica-alumina glass coating. The chlorine passes off in the form of a gas through the stacks.

When the pipes are properly glazed the firing is stopped, the kiln is carefully opened, and the pipes gradually cooled. Cooling too rapidly will cause cracking of the pipe. This cooling or annealing is very important to the final strength and quality of the pipe.

In the finished product, the burned clay has lost its tendency to become soft by absorbing water again. This is accomplished by the removal of the chemically combined water and in condensing the clay and hardening it by partial fusion so that it will resist the action of weather or mechanical wear. These influences are resisted in the greatest degree when the pores of the clay are closed by thorough vitrification, and salt glazing. The salt glaze added to this vitrification aids in making the product impervious alike to water, acid and alkali action and mechanical wear.

When the kiln has sufficiently cooled, the pipe is removed to cars for shipment or stored in the pipe yard. R. L. J.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

HOLLOW TILE MEETINGS.

THERE WAS A MEETING of the Board of Directors of the Hollow Building Tile Association and a number of Committee meetings held during June. The meeting of the Board of Directors was held at the Hotel Pennsylvania, New York City, June 20-21, and this was preceded by a number of committee meetings June 18-19.

Secretary Sleeper reports that the attendance of members at the directors meetings and various committees showed a very pronounced spirit of loyalty and good will, a spirit which he feels promises a full measure of success for the organization effort.

The directors meeting was presided over by President J. T. Howington, of Louisville, and the various committee chairman made their reports and led the discussion on them.

In the discussion relative to the testing of floor slabs, the committee reported that they had outlined a plan covering three different tests, one covering the long span floor, another the two-way floor, and the third covering a new type of floor construction, known as the King floor. In this connection they requested a report from Mr. F. J. Huse, Association Chief Engineer, who stated that he had talked with Mr. Bates and Mr. Ingberg of the Bureau of Standards, and that they had experienced a willingness to undertake the tests if the association would finance the construction of the slabs. As this would necessitate an expenditure of approximately \$5,000, which was considered more than could be paid at this time, it was suggested that only the long span slab be tested first. A motion was made by Mr. Dailey and seconded by Mr. Deckman that Mr. Wallace, as chairman of the committee, confer with the executive committee who were given power to act.

The Research Committee reported through Chairman E. W. Dailey that pending the organization of a joint investigation committee they would endeavor to get the Bureau of Standards to conduct special research work on dies and augers.

In the matter of advertising, V. L. Yepsen, chairman, recommended that a special effort be made to encourage individual advertising by manufacturers and suggested that the association prepare and have printed more literature to be merchandised to the membership. It was also suggested that there be developed a larger use of the association films.

Chairman R. G. Wallace, of the Promotion Committee, made a report of the work of the field representatives through the first half of the year, and recommended that the promotion committee meet with the various field representatives from time to time, and it is contemplated that a conference of this kind be held in Chicago soon. The attendance at the committee gatherings and a meeting of the Board of Directors follows:

Standards Committee Meeting, Washington, D. C., June 18-19—

H. R. Straight, Chairman, Adel Clay Products Co., Adel, Ia.
H. C. Downer, Malvern Fire Clay Co., Malvern, Ohio
C. W. Dixon, Columbus Brick & Tile Co., Columbus, Ga.
P. H. Bevier, National Fire Proofing Co., New York City.
E. R. Sturtevant, Fraser Brick Co., Dallas, Tex.

Statistics Committee Meeting, New York City, June 19—

J. J. Amos, Chairman, Humboldt Brick Mtg. Co., Humboldt, Kans.
F. R. Hale, Vigo-American Clay Co., Terre Haute, Ind.

Traffic Committee Meeting, New York City, June 19—

F. R. Hale, Chairman, Vigo-American Clay Co., Terre Haute, Ind.
J. A. Dailey, Shale Hill Brick & Tile Co., Chillicothe, Mo.
W. M. Council, National Fire Proofing Co., Pittsburgh, Pa.

Advertising Committee Meeting, New York City, June 19—

V. L. Yepsen, Chairman, Anness & Potter Fire Clay Co., Woodbridge, N. J.
J. J. Amos, Humboldt Brick Mtg. Co., Humboldt, Kans.
R. G. Wallace, National Fire Proofing Co., Pittsburgh, Pa.
J. H. Fayne, Fraser Brick Co., Dallas, Tex.

Promotion Committee Meeting, New York City, June 19—

R. G. Wallace, Chairman, National Fire Proofing Co., Pittsburgh, Pa.
V. L. Yepsen, Anness & Potter Fire Clay Co., Woodbridge, N. J.
C. G. Deckman, Medal Paving Brick Co., Cleveland, Ohio.
R. L. Gamewell, Birmingham Hollow Tile Co., Birmingham, Ala.

Research Committee Meeting, New York City, June 19—

E. W. Dailey, Chairman, North Iowa Brick & Tile Co., Mason City, Ia.
H. C. Ross, Malvern Fire Clay Co., Malvern, Ohio.
R. A. Shipley, National Fire Proofing Co., Canton, Ohio.
Geo. P. Fisher, National Fire Proofing Co., Ottawa, Ill.

Directors Meeting, New York City, June 20 and 21—

J. T. Howington, President, Coral Ridge Clay Products Co., Louisville, Ky.
Wm. Hutton, Jr., Vice-President, Troy Fire Proofing Co., Troy, N. Y.
H. C. Downer, Treasurer, Malvern Fire Clay Co., Malvern, Ohio.
H. M. Keasbey, National Fire Proofing Co., Pittsburgh, Pa.
J. J. Amos, Humboldt Brick Mtg. Co., Humboldt, Kans.
R. G. Wallace, National Fire Proofing Co., Pittsburgh, Pa.

V. L. Yepsen, Anness & Potter Fire Clay Co., Woodbridge, N. J.
 F. R. Hale, Vigo-American Clay Co., Terre Haute, Ind.
 C. W. Dixon, Columbus Brick & Tile Co., Columbus, Ga.
 C. G. Deckman, Medal Paving Brick Co., Cleveland, Ohio.
 J. A. Dailey, Shale Hill Brick & Tile Co., Chillicothe, Mo.
 E. W. Dailey, North Iowa Brick & Tile Co., Mason City, Ia.
 H. R. Straight, Adel Clay Products Co., Adel, Ia.

TILE AS DEALER STOCK.

ONE OF THE interesting things about the reports of some of the field men of the Hollow Building Tile Association is in the evident tendency toward making tile a regular item in the stock of retail dealers in lumber and building material. It may be said of hollow building tile, as of brick and sewer pipe and flue linings, that the way toward real trade development in many communities is through getting these items made a part of the regular stock of the dealer.

The idea of selling a product successfully without having a stock on hand does not belong much with the merchandising of today. It is true that in hollow tile as in brick and drain tile a lot of the sales for big jobs will be shipped after the orders are secured and will go direct to the job instead of into the dealer's stock. Perhaps in the course of a year considerably more material will go direct to the job than goes into the stock. All this, however, does not alter the fact that stocking by dealers will help materially in the sales work and will help the dealer fulfill his true mission by taking care of small orders promptly.

In some sections of the country, more particularly through Iowa, Kansas and the Dakotas, there is already noticeable a favorable tendency toward carrying stocks on hand and a fair share of the dealers are putting in stocks of hollow building tile. Eventually there will be more of it everywhere and this is a good field in which to do mission work.

TAKING STOCK OF LUBRICATION.

THE PUBLICITY DEPARTMENT of the cement industry makes a statement that there is required for lubrication annually in this industry 3,800,000 pounds of grease, and 3,700,000 gallons of oil, costing well over a million dollars. This is a good reminder that the clayworking industry might well take stock of its lubrication for the reason that it probably uses an amount of lubrication comparable with that in the cement industry, and the figures show that some importance attaches to lubrication. There is a chance for wastefulness of oil on the one hand, and a chance for proper lubrication which means damage to equipment and lack of efficiency on the other hand. The clayworking industry, like the cement industry, has different types of equipment, some that is heavy and slow moving requiring heavy greases, and some that is high speed requiring lighter oils. And more or less everywhere there is the question of grit and dust and keeping it out of the bearings involved. A study of lubrication and a comparison of results should bring useful information and worth while suggestions to the clayworking industry.

OVER ORDERING.

THE CEMENT PEOPLE and the general contractors have been wrestling with the question of over ordering, that is of a contractor getting a price estimate when figuring on some job in which he may tentatively include a larger quan-

tity of cement than will actually be required for the job, and there is some complaint among cement people that this over contracting is hurtful.

We have something of the same thing in the clayworking industry. Any contractor figuring on big jobs must make a tentative estimate of brick, hollow building tile and other clay products required and get figures on the cost of these from the producers before he can complete his figures on the job. As a matter of safety there is usually included in these estimates a somewhat larger quantity than is actually used so as to prevent a running out when the job is being carried through, and sometimes there is material left on the job that must be disposed of some way. It is not practical to give an exact estimate order for material to do a given job so as to have nothing left over and nothing short. A little margin of safety here is essential. The question is to determine what is fair and best all around.

There is room for some good co-operative work here between contractors and producers of clay products on the matter of specific orders and in taking care of shortages and left-overs and a little getting together and checking up and swapping of ideas should bring some helpful relief.

MAKING SELLING AN EXPOSITION FEATURE.

IT IS NOW REPORTED that the chemical exposition to be held at the Grand Central Palace, N. Y., September 17-22, is to be made a huge chemical buying affair. The idea being to develop selling and sales work as a strong feature of the annual exposition. There are some trade organizations which have made a feature of this for some time, that is of displays and of selling in connection with the annual gatherings. In the clayworking industry there is practically always an interesting display of machinery and equipment and it is probable that more development of the idea of buying and selling at the annual N. B. M. A. gatherings might add interest and zest for the delegates as well as make it a more important occasion for the machinery contingent.

DRAIN TILE HANDLING WRINKLES.

IT IS THROUGH "Wood Construction," the official organ of the Ohio Retail Lumber Dealers, that we get a story about how Ray L. Walker, a farmer of Lorain County, Ohio, has devised an unloading chute for tile which county agent H. L. Rogers says is the simplest and most successful device he has ever seen.

"It is, in effect, a tile-sized trough sloped down from the back of a wagon, so that a load of tile can be slid down it, one by one and end to end, and laid out on the land along the line of the proposed ditch as the wagon is driven slowly forward.

"The trough is simply a two-by-six eight feet long, with two inch boards nailed to the edges to hold the tile on the track as it slides down. The top end of the chute is attached by a half-inch rope to the tail of the wagon, so that it slopes about 30 degrees. The lower end is carried on small wheels, about a foot in diameter.

"An inch board three inches wide and three feet long is nailed across the bottom of the chute where it touches the wagon, this to prevent overturning on rough ground. To prevent breakage, and to insure even distribution of tile, the chute should be kept full at all times.

"Mr. Walker and his brother, Harry, has laid with this device, 34,000 tile on 30 acres of garden land, which he has drained. Extension engineers at the state college of agriculture say that the idea can't help but work. They are going to try making a chute without wheels, to see if it won't slide along on the ground just as well."

SUMMER MEETING—NEW JERSEY CLAY WORKERS' ASSOCIATION AND EASTERN SECTION AMERICAN CERAMIC SOCIETY.

THE SUMMER MEETING of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society was held on June 29, and as in the case of former years, the Country Club at Trenton was the scene of the gathering. The 1923 convention will go down as close to a record-breaker, about 125 members and guests being present from all parts of the state, as well as New York, Philadelphia and other nearby points.

The gathering was opened with a luncheon at 1 p. m., in the banquet hall of the club house, with Andrew Foltz, head of the Lambertville Pottery Co., Lambertville, N. J., president of the organization, presiding. During the course of the enjoyable meal, brief addresses were made by Charles Howell Cook, president of the Cook Pottery Co., Trenton; Theodore A. Randall, secretary, National Brick Manufacturers' Association and publisher THE CLAY-WORKER; Will P. Blair, president, National Paving Brick Manufacturers' Association; Charles W. Crane, president, the Crossman Co., South Amboy, N. J.; and LeRoy H. Minton, general superintendent of the General Ceramics Co., Metuchen, N. J. A brief talk was also given by Thomas Campbell, Sydney, Australia, engaged in the clay products industry in that country, and now a visitor to the United States. Mr. Blair has just returned from a trip abroad and his address was particularly interesting with regard to his findings in the line of paved streets in England, Scotland and other foreign countries. He prophesied that brick was the coming road pavement, provided that a suitable foundation could be found.

Brief Business Session.

Prior to the technical session of the afternoon, a brief business meeting was held, with President Foltz in the chair. It was pointed out that there was a deficit of about \$1,000 facing the treasury of the organization, due to the extraordinary demand for funds in connection with the new Ceramics Building at Rutgers' College, New Brunswick, and under the inspiration of Charles Howell Cook, a call for subscriptions quickly brought mounts of \$100 until well over the necessary sum was secured.

The New Jersey Clay Workers' organization will handle all details in connection with the annual meeting of the American Ceramic Society to be held at Atlantic City next February, and committees were appointed from the membership to care for all matters of railroad transportation, hotel accommodations, banquet, reception, finance and the like. In all, about fifty men will serve on these various committees and it is expected to carry out all details to make the convention one of the largest and most successful ever held.

A committee was appointed from the membership of the association to work with the Board of Trustees of Rutgers' College and State University of New Jersey in connection with the ceramics building and department. This committee will be composed of Abel Hansen, head of the Fords Porcelain Works, Perth Amboy, N. J., chairman; Chas. A. Bloomfield, Bloomfield Clay Co., Metuchen; Charles A. Cook; H. A. Brown, head of Lenox, Inc., Trenton; and F. W. Dinsmore, Imperial Porcelain Works, Trenton.

Tunnel Kilns.

The technical session was opened by Professor Carl B. Harrop, department of ceramic engineering, Ohio State University, Columbus, who made the principal address of the meeting. His subject was, "The Application of Tunnel Kilns in the Firing of Ceramic Wares," and the speaker set forth,

in his introductory remarks, that the discussion would deal with tunnel kilns in general, and not with any particular type of such kinds of kilns.

It was brought out that in the use of the tunnel kiln as compared with periodic operation, there is a saving of from 50 to 85 per cent in fuel. Such kilns, he said, were growing rapidly in volume of installations and are destined to supersede the usual method of firing clay wares in almost all branches of the industry.

With respect to the successful operation of tunnel kilns, the speaker pointed out that a higher type of kiln burner than usually encountered was necessary, and that the failures of such kilns are due often to a combination of circumstances in which the kiln-burner is no mean factor. Features of design, of course, with respect to the particular kind of ware to be handled, likewise, are responsible for tunnel kiln difficulties and failures.

Speaking of the practicability of kilns of this character, Professor Harrop said that the best evidence was the marked growth in installations in all parts of the country in recent years, and he exhibited a chart giving this information in an interesting and comprehensive way—a compilation of data never before attempted, he stated.

This chart, itemized below, sets forth all kilns of different types which have been constructed and operated more or less successfully during the past 13 years, to the best of the speaker's records and information, and it was stated to be at least 95 per cent correct, if not entirely so:

Character of Ware	Number of Kilns
Vitreous china	3
Semi-Porcelain	9
Sanitary ware	14
Cooking and Art ware.....	1
Stoneware	2
Refractories	6
Floor and wall tile.....	12
Terra Cotta	1
Brick and hollow tile.....	15
Drain Tile	1
Roofing Tile	2
Electric porcelain	8
Carbon Electrodes	3
Abrasives	1
Specialties	2
Total.....	80

Continuing, Professor Harrop said: "I do not know what you may think of the tabulations on this chart, and I am not going to analyse it closely now, but you can see readily what branches of the industry are interested and 'taking chances' on tunnel kilns."

With regard to the use of fuels for tunnel kiln firing, it was stated that coal, oil and natural gas are all being used successfully, the last noted being especially desirable. In the line of producer gas, it was pointed out that while entirely satisfactory in the firing of any ware, a rather serious objection in the speaker's opinion, was the difficulty in transmitting, necessitating a double installation of flues to handle the separation of the tar and soot.

The capacity of the kiln will control largely the percentage of fuel-saving, it was set forth, and in this there are three primary losses that go on in a tunnel kiln, (1) Loss of products by combustion; (2) Loss in discharged ware; and (3) Loss through radiation and conduction.

In conclusion, a number of interesting lantern slides were shown, exhibiting different installations and features of tunnel kiln construction.

Following the address, there was a brief discussion of the subject in which Mr. Dressler, American Dressler Tunnel

Kilns, Inc.; T. G. McDougal, Champion Porcelain Co.; and C. F. Geiger, Carborundum Co., participated.

Feldspar Classifications.

The second and concluding paper of the technical session was by Chester G. Treischel, General Electric Co., Pittsfield, Mass., on the subject of "Feldspar Classifications and Specifications."

This address had much to do with the work of the American Ceramic Society in its line of investigations of feldspars. It was set forth that in the speaker's opinion, the society should not draft a set of specifications for material of this sort—rather, this is a matter for the individual purchaser. On the other hand, it was mentioned that the society should, properly, publish a classification of feldspar, the three important items in this respect being (1) the chemical composition of the various grades of the material; (2) the fineness of such grades; and (3) fusion temperature of the different grades. A committee composed of six consumers and four producers is now giving attention to the proposition, and will make a formal report at the annual meeting of the society next February.

With regard to the subject of feldspar specifications, it was pointed out that these should cover complete data with respect to physical properties and tests, such as color and specking, fineness of grain, method of conducting tests for fineness, moisture content, fusion behavior, and so on.

Owing to the lateness of the hour, there was no discussion of this paper, and after a vote of thanks to the speakers, the meeting was adjourned.

L. R. W. A.

THOSE IN ATTENDANCE.

Chas. T. H. Phillips, Sneyd Enameled Brick Co., Trenton, N. J.; George H. Brown, Ceramics Department, Rutgers' College, New Brunswick, N. J.; Roland V. Tailby, Matawan Tile Co., Matawan, N. J.; Andrew Foltz, Lambertville Pottery Co., Lambertville, N. J.; C. C. Treischel, General Electric Co., Pittsfield, Mass.; L. A. Thompson, General Electric Co., Pittsfield, Mass.; F. J. Wolff, The Monument Pottery Co., Trenton, N. J.; Charles W. Crane, 17 Battery Place, New York City, Crossman Company; Wm. Crawford Hirsch, Rahway, N. J.; K. E. Ward, Newark, N. J.; Enoch Mountford, Anchor Pottery, Trenton, N. J.; Herbert W. Moore, Precision Grinding Wheel Co., Philadelphia, Pa.; Crawford C. Maderia, Philadelphia, Pa.; Leonard S. Briggs, Lenox, Inc., Trenton, N. J.; F. L. Steinhoff, "Ceramic Industry," Chicago, Ill.; H. M. Scott, Trenton, N. J.; I. R. Edgar, Metuchen, N. J.; L. E. Biddle, Jr., Metuchen, N. J.; D. R. Edgar, Metuchen, N. J.; George Simcoe, Trenton, N. J.; C. S. Maddock, Jr., Thos. Maddock's Sons Co., Trenton, N. J.; C. B. Yomens, Thos. Maddock's Sons Co., Trenton, N. J.; Dr. Emil Weber, Thos. Maddock's Sons Co., Trenton, N. J.; C. J. Hudson, Norton Company, Worcester, Mass.; Eric B. Turner, Trenton Flint & Spar Co., Trenton, N. J.; J. G. Carter, Trenton, N. J.; George W. Dilks, Jr., Philadelphia, Pa.; O. E. Mathiasen, N. J. Terra Cotta Co., Perth Amboy, N. J.; L. E. Putman, Celite Products Co., New York City; N. A. Ragland, Perth Amboy Tile Wks., Perth Amboy, N. J.; F. H. Burroughs, Star Porcelain Co., Trenton, N. J.; F. S. Thompson, Sayre & Fisher, Sayresville, N. J.; H. H. Sortwell, Star Porcelain Co., Trenton, N. J.; S. O. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.; A. B. Christopher, Elk River Clay Products Co., North East, Md.; V. B. Case, Paper Makers Importing Co., Easton, Pa.; C. C. Engle, United Clay Mines Corp., Trenton, N. J.; M. C. Hendrickson, United Clay Mines Corp., Trenton, N. J.; W. J. Stephani, Ketcham Terra Cotta Co., Crum Lynne, Pa.; I. L. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.; Donald Hagar, Mosaic Tile Co., Matawan, N. J.; A. W. Christiana; M. D. Warren, Ceramic Traffic Association, Trenton, N. J.; H. S. Landell, Proctor & Schwartz, Inc., Philadelphia, Pa.; J. Prosser, Morton Clays, Trenton, N. J.; Thos. Layden, Fords Porcelain Wks., Perth Amboy, N. J.; Henry Hansen, Fords Porcelain Wks., Perth Amboy, N. J.; E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.; Geo. A. Williams, Atlantic Terra Cotta Co., Perth Amboy, N. J.; Ralph E. Hanna, Atlantic Terra Cotta Co., Perth Amboy, N. J.; Chas. E. Jacquart, Amer. Enameled Brick & Tile Co., South River, N. J.; J. W. Hepplewhite, Johns-Manville Co., Manville, N. J.; I. D. Hagar, New York City; L. R. W. Allison, 170 Roseville Ave., Newark, N. J.; F. H. Hastings, Hartford Faience Co., Hartford, Conn.; W. H. Fulper, Fulper Pottery Co., Flemington, N. J.; J. M. Strange, Fulper Pottery Co., Flemington, N. J.; Wm. P. Blair, National Paving Brick Mfrs. Ass'n, Cleveland, Ohio; Theo. A. Randall, National Brick Mfrs. Ass'n, Indianapolis, Ind.; F. W. Morris, Trenton, N. J.; W. J. J. Bowman, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; T. A. Klinefelter, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; Albert Gerber, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; Donald Butler, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; Ed. Dithridge, Trenton Fire Clay & Porcelain Co., Trenton, N. J.;

D. P. Forst, Robertson Art Tile Co., Trenton, N. J.; Robert E. Anderson, Robertson Art Tile Co., Trenton, N. J.; J. M. Kregar, Woodbridge Ceramic Corp., Woodbridge, N. J.; Carl Bloor, Trenton, N. J.; Jos. Kregar, Trenton, N. J.; H. C. Corbin, Conn. Porcelain Co., Trenton, N. J.; P. M. Cranmer, Conn. Porcelain Co., Trenton, N. J.; Carl B. Harrop, Columbus, Ohio; Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy, N. J.; D. R. Winans, Pardee Co., Perth Amboy, N. J.; Chas. F. Eilert, Pardee Co., Perth Amboy, N. J.; Hubert W. Warden, Jr., Pardee Co., Perth Amboy, N. J.; Morgan B. Eilert, Jardee Co., Perth Amboy, N. J.; Gregory C. Hill, Lockle Insulator Co., Baltimore, Md.; R. J. S. Barlow, Roessler & Hasslacher Co., Trenton, N. J.; George W. Keller, Trenton; J. A. Williams, Mitchell-Bissell Co., Trenton, N. J.; F. G. Lord, Pa. Pulverizing Co., Lewistown, Pa.; T. G. McDougal, Flint, Michigan; Chas. Howell Cook, Cook Pottery Co., Trenton, N. J.; H. D. Foster, Washington, D. C.; Oscar Crispens, New York City; Thos. Campbell, Sydney, Australia; H. L. Williams, Trenton, N. J.; F. W. Dinsmore, Imperial Porcelain Wks., Trenton, N. J.; Chas. F. Geiger, Carborundum Co., Perth Amboy, N. J.; Geo. C. Crossley, United Clay Mines Corp., Trenton, N. J.; Frederick Stanger, Enterprise White Clay Co., Philadelphia, Pa.; L. Morton Morley, Brown Instrument Co., Philadelphia, Pa.; R. L. Clare, Federal Terra Cotta Co., Woodbridge, N. J.; R. H. Minton, General Ceramics Co., Metuchen, N. J.; Fred A. Whitaker, General Ceramics Co., Keasbey, N. J.; John B. Maddock, Trenton, N. J.; Leslie Brown, Lenox, Inc., Trenton, N. J.; Clifford C. Clarke, Ceramics Dept., Rutgers' College, New Brunswick, N. J.; M. G. Hartmann, Ceramics Dept., Rutgers' College, New Brunswick, N. J.

A NEW BRICK CLEANING MACHINE.

WE ILLUSTRATE a new device for cleaning old brick which it is claimed does the work expeditiously and with relatively little expense. As the demand for brick exceeds the supply, second hand brick in many of the leading markets,



The Eureka Brick Cleaning Machine.

are selling for nearly as much as new brick. Anything in the form of building brick finds a ready market these days, hence, this new device may prove a boon to contractors and builders.

The machine is so constructed that the mortar on the old brick is removed by a series of cutting sections or discs. These may be quickly removed or renewed as occasion requires. They are made of hard white iron of special composition. From elaborate tests, it is claimed, it can be safely estimated that the average cost of renewing the cutting sections is 8c for each thousand brick cleaned, which is less than the wear and tear on hatchets and similar tools used by the hand method and the wear on the cutting tool is the only wear on the machine of any consequence.

As shown in the picture the operator sits close enough to the ground to enable him to pick the brick from the adjoining pile, place them on the machine, and in turn toss them to one side when cleaned. The machine can be moved along the side of the pile of old brick by the operator. The mortar from the cleaned brick accumulates to one side where it is easily shoveled out of the way.

The machine is the product of The Maroa Manufacturing Co., Maroa, Ill., and they offer it on a five days' trial. They claim that any brick that can be cleaned economically by hand can be cleaned at a decided saving by this machine. For further particulars address the above mentioned firm.

Written for THE CLAY-WORKER.

WASHINGTON DEVELOPMENTS OF INTEREST TO THE CLAYWORKING INDUSTRY.



THE INTERSTATE Commerce Commission announces that a reduction of freight rates in the state of Iowa on brick, tile and other clay products has been ordered and is now effective. The reduction, the commission estimates, will mean a saving of many thousands of dollars a year to shippers of brick and other clay products as well as to the builders of the state.

According to the commission, the reductions vary from one-half cent to one cent per hundred pounds on shipments up to 125 miles, the schedule to apply on shipments of 50,000 pounds or more on most of the clay products and 40,000 pounds on clay building tile. The minimum shipments of clay drainage tile to benefit by the reduction will be 30,000 pounds.

The commission points out that the freight rates on these products at the time this country entered the war averaged about 2.8 cents per hundred. War-time changes increased the tariff to about 7 cents, and it has since been reduced to an average of 6 cents.

The Bureau of Public Roads, Department of Agriculture, has issued a statement showing that in the month of February, 1923, there were brick roads laid of a value of \$330,160. These roads were laid under the federal aid plan passed by Congress whereby the government pays 50 per cent and the state pays 50 per cent. The bureau states that where the use of brick for road-making is found to be desirable from the viewpoints of obtainability and cost they are being used. Where long hauls are necessary in order to use brick for paving and other materials are more accessible the latter are utilized.

The Bureau of Foreign and Domestic Commerce announces the receipt of a communication from a construction firm in

The division of building and housing of the Bureau of Standards gives the following prices as obtaining on June 1, for common bricks and hollow tiles in the cities named:

Detroit	\$17.50	Pontiac	\$16.00
Bay City	15.00	Saginaw	18.00
Waterloo	15.20	Council Bluffs	16.50
Des Moines	19.00	Kansas City	16.50
St. Louis	18.50	Pittsburgh	18.00
Erie	16.75	Cleveland	16.00
Akron	18.00	Lorain	23.00
Mansfield	20.00	Dayton	18.00
Hamilton	24.00	Fitchburg	24.00
Haverhill	24.00	Fall River	26.50
New London	30.00	Poughkeepsie	20.00
Albany	27.00	Schenectady	25.00
Rochester	17.75	Buffalo	22.12
Scranton	25.00	Baltimore	20.00
Richmond	19.00	Fairmont	24.00
Columbia	12.50	Savannah	17.50
New Orleans	17.75	Shreveport	15.00
Grand Forks	15.00	Sioux Falls	18.00
San Antonio	17.00	Los Angeles	15.00

Prices for hollow tile (8x12x12) each:

Detroit	\$0.18	Pontiac	\$0.18
Bay City	.18	Saginaw	.17
Waterloo	.17	Council Bluffs	.14
Des Moines	.15	Kansas City	.18
Pittsburgh	.21	Erie	.19
Akron	.19	Lorain	.21
Mansfield	.17	Dayton	.21
Fitchburg	.30	Haverhill	.30
Poughkeepsie	.21	Albany	.27
Rochester	.21	Buffalo	.22
Scranton	.25	Baltimore	.24
Richmond	.23	New Orleans	.22

a city in Peru, South America, asking that it be placed in touch with American manufacturers of brick and other building materials. The concern, as well as buying outright, desires to arrange for securing the agency for that country for these lines. Such of our manufacturers as may be interested will be given all additional details by addressing Bureau of Foreign and Domestic Commerce, Washington, and referring to inquiry No. 6393.

Authorities here have been officially advised by the Canadian government that a modification of the import duties in that country has been made covering certain fire brick. The new ruling, which is now in effect, provides that fire brick containing not less than 90 per cent of silica; magnesite fire brick or chrome fire brick; other fire brick valued at not less than \$100 per thousand, rectangular shaped, the dimensions of each not to exceed 125 cubic inches, for use exclusively in the construction or repair of furnaces, kilns, or other equipment of a manufacturing plant, will be admitted free of all duty. Fire brick, not specified, for use exclusively in the construction or repair of furnaces, kilns or other equipment of a manufacturing plant, will pay 15 per cent ad valorem.

The U. S. Patent Office has granted trade-mark registration to the National Paving Brick Manufacturers' Association, Cleveland, Ohio, for the title "Dependable Highways" for its publication. The title has been in use since April, 1921, and registration was applied for on January 25, 1923.

ALTHOMAR.

TERRA COTTA SPECIFICATIONS UNDER DEVELOPMENT.

THE National Terra Cotta Society and the American Institute of Architects, working through their respective committees on specifications and structural service for the past two years, have formulated a set of specifications for architectural terra cotta and its setting. Terra Cotta is a building material of great and increasing importance, being a burned clay product in architectural forms, set as masonry. Its principal use is for the facing and decoration of the exterior masonry work of buildings.

Mr. William H. Powell, as President of the National Terra Cotta Society, and Mr. Stephen F. Voorhees, as chairman of the Structural Service Committee of the American Institute of Architects, submitted the specifications to the American Engineering Standards Committee for development, and ultimately for approval as a national standard. The specifications already developed will form the basis of work of a representative sectional committee which will be organized specially for the purpose.

The special committee appointed by Mr. A. W. Whitney, chairman of the A. E. S. C., to consider this project, was headed by Dr. F. C. Brown, Assistant Director of the Bureau of Standards, and included Mr. William H. Powell, President of the National Terra Cotta Society and Chairman of its Committee on Specifications; Mr. S. W. Jones, State Architect of New York, and representative of the American Institute of Architects on the A. E. S. C.; Mr. H. H. Quimby, representative of the American Society of Civil Engineers; and Mr. C. L. Warwick, representing the American Society for Testing Materials.

As a result of the consideration of the problem, the special committee unanimously recommended, at the the meeting of the American Engineering Standards Committee on June 14, that the Bureau of Standards should act as sponsor for the work, assuming the responsibility for the organization of the sectional committee, which, as is the regular course under A. E. S. C. procedure, will include all interests concerned in the manufacturer, use, and setting of architectural terra cotta. This recommendation was adopted by vote of the American Engineering Standards Committee, and the organization of the working committee and the development of the specifications will be promptly undertaken.

Written for THE CLAY-WORKER.

TWO STANDARD DIMENSIONS FOR BRICK AGREED ON BY WASHINGTON CONFERENCE.

Alfred T. Marks.

MANUFACTURERS, DISTRIBUTORS and users of common and face brick met in conference at the Department of Commerce, in Washington, on June 21, for the purpose of considering the feasibility or reduction of the number of sizes now prevailing in common and face brick. The meeting was presided over by William A. Durgin, chief of the department's Division of Simplified Practice, and was largely attended. The conference was the second called to discuss the subject, the preliminary session having been held on May 11.

Chairman Durgin opened the meeting with an illustrated talk on Simplified Practice, and its value as a waste-elimination measure. He pointed out that the Department of Commerce, through its Division of Simplified Practice is not initiating this movement but is instead co-operating with industries which have requested the Department's aid in solving the problems of excess or superfluous variety in their products. The Division's function is to endorse and support the recommendations of the several interests when they shall mutually agree upon simplifications of benefit to all concerned.

The Common Brick Manufacturers' Association of America and the American Face Brick Association submitted to the conference the following resolution:

"WHEREAS, in the manufacture of Face Brick and Common Brick, an infinite variety of chemical combinations in the clays used as raw materials is encountered and, in addition, science has as yet been unable to devise any method or an exact distribution of heat throughout any character of kiln, it is necessary to recognize, in attempting to standardize dimensions, that there must be variations in size account the variations in shrinkage, and that any dimensions determined upon as standard must be understood as being approximate and being the average dimensions of an entire unit of shipment, and

WHEREAS, variations of dimensions of brick units have for centuries, been successfully absorbed in slight variations in the size of the mortar joint, and

WHEREAS, a large percentage of the Brick now being produced are approximately 8 inches long, 2¼ inches thick, and 3¾ inches wide, in the case of textured Face Brick and Common Brick; or 3⅞ inches wide, in the case of smooth Face Brick, and

WHEREAS, these sizes are practical from the points of view of the architect, the engineer and the manufacturer, now therefore,

BE IT RESOLVED, that this meeting and the several organizations and Governmental Departments which are represented, do accept and endorse the above approximate sizes as being best fitted to the use for which the material is intended, and

BE IT FURTHER RESOLVED, that it is definitely understood that in the service of straight shades of any Face Brick and all grades of Common Brick the average dimensions must frequently show slight variation from standard size, it being early comprehended by all that for efficiency and economy, the manufacturer must aim at standard dimensions for the average of his entire production."

The first disagreement came following the reading of the resolution, when representatives of the concrete, sand lime, and cement brick industry offered an amendment to the reso-

lution by calling for the insertion of the word "clay" before the words "face brick" and "common brick" in order that there might be no confusion as to what type of bricks was covered by the proposed action of the conference. After extensive consideration of the subject, it seemed to be the consensus of opinion that such confusion was not likely to arise, or to be serious if it did. So the amendment was withdrawn.

One of the results of the stand taken by the representatives of the concrete brick industry, however, was the submission to the Department of Commerce of a formal request by that industry that the Division of Simplified Practice take up with them an independent program of simplified practice in their own field.

Following considerable discussion of the general subject, participated in by practically all present, a vote was taken on the resolution submitted by the Common Brick Manufacturers' Association of America and the American Face Brick Association, and it was carried unanimously. It was agreed that the common brick and the face brick organizations that they will immediately make a general survey of the industry in order to bring out adherence to the adopted standards, and report the results of their work in one year to the Division of Simplified Practice.

At a meeting held June 19, 1923, at the Department of Commerce, the Standards Committee of the Hollow Building Tile Association reported to the Department's Division of Simplified Practice, the results of a survey which the Association has made of existing varieties in types, sizes, and weights of hollow building tile.

The survey showed 36 different sizes—each made in a wide variety of weights. The committee recommended the elimination of 23 of the 36 sizes, and the retention of 13 as "standards" for the industry. A standard weight, with a permissible variation of 5 per cent over or under the standard weight, was also recommended for each of the 13 sizes retained.

The committee requested the Department of Commerce, through its Division of Simplified Practice, to call a general conference next October of manufacturers, architects, engineers, contractors, and builders to discuss the general adoption and use of the recommended standard sizes and weights.

CHANGE OF LOCATION.

Thomas M. Wilson writes he has changed the name of the Thomas M. Wilson Brick & Clay Engineering Company, which has been located at Pittsburgh, Pa., to the Wilson Kiln and Dryer Company, and will change his base of operations to Layton, Pa. In addition to his kiln and dryer business, his company will develop a large coal and clay tract at Layton.

NEW PLANT OF TAPLIN-RICE-CLERKIN COMPANY NEARING COMPLETION.

A recent visit to the plant of the Taplin-Rice-Clerkin Company factory, at Akron, Ohio, found work being pushed on the new plant which is being built to replace the one destroyed by fire in the early spring. Mr. William Clerkin, the president of the company, advised he expected to have this plant in full operation by September 1. They are adding to the line of clayworking machinery heretofore manufactured clay, rock and shale crushers and a full line of potters' machinery equipment. During the rebuilding of the plant they have been taking care of their orders through outside foundries, having recently completely equipped the Lovell Sewer Pipe Company plant at Lovell, Wyoming, with pans, presses, dies, etc. At present they are equipping the new plant of the Armour Grain Company, at Milwaukee with their patent oat cutters and hullers, a line with which they have been identified for more than thirty years. Their new plant will be of fireproof construction throughout.

HOME OF THE FAMOUS AIREDALE FACE BRICK.

SOME FIFTY MILES east of Columbia, the capital of South Carolina, is the charming hamlet Sumter, the county seat, and a thrifty community that bids a smiling welcome to all comers. Its broad thoroughfares, well paved and lined with splendid shade trees, appeal to the tourists, and with the well-kept lawns, lovely shrubs and flowers, it is indeed an attractive oasis for the motorist—at least, so we found it when on a pleasant spring day we stopped there over night on our way South.

The chief purpose of our visit was to meet and greet Irving A. Ryttenberg, and inspect the plant of the Sumter Brick Works, where the now famous Airedale Face Brick are produced. We were fortunate enough to find "Rytt" at home, and, with blandishments all his own, he welcomed us to Sumter, and escorted us about the city, which has gained name and fame throughout the nation as the home of "Airedale Brick."

Some four miles from town the plant is located by the roadside; indeed, for a decade or two it was a roadside brick plant, making common brick—very common brick indeed, "Rytt"



Irving A. Ryttenberg, Sumter, S. C.

admits. His father started the plant some twenty-odd years ago, and in a routine way was satisfied to meet the local demand for builders. Then Irving made his presence felt.

Having discovered that the clay was capable of better things, that it had a wide range of colors and stood a high degree of heat, he proceeded to test it, and surprised himself and the entire clay trade and clan of Ryttenburg, by producing some new and original colors ranging from browns to black, with intermingling of greens, buffs and blues—in fact, including almost every color in the rainbow. We wonder why he did not christen his rough-texture brick "Rainbow Brick," but "Rytt" is nothing if not original, and he chose the name of Airedale, maybe because a friend had given him a pedigreed Airedale pup, of which he had become very fond, and very proud; anyway, he announced to the building trades the fact that "Airedale Brick" supplied a long-felt want for multi-colored brick, and couched his announcement in such forceful, winning phrases that many architects were convinced that no other brick suited them quite so well as Airedale, so the demand grew and grew so that "Rytt" was unable to sleep at times for fear he wouldn't be able to supply all the art-loving home builders of the nation with the coveted Airedales. By everlastingly keeping at it he has been able to meet the de-

mands up to this time, though it taxes his energies and resources to do so.

At the time of our visit he had just booked an order for four hundred thousand Airedales for St. Paul or Minneapolis. This is an unusually large order of face brick. Lesser orders are of common occurrence with Rytt, but some of them are worthy of special comment. For instance, they recently booked an order for Airedales to be used in the Harkness Memorial Quadrangle at Yale University. The quadrangle is to cost about \$8,000,000, so it is quite a compliment to the "Dixie" texture brick, which is the brand they will use. Sumter brick are being shipped to Western and Northern markets regularly, including New York City.

It is claimed that Rytt's clay is the only clay not a fire clay



"Rytt's" Two-Story Office—Note the Outside Elevator.

to burn which requires 2,600 degs. F. or higher. It expands so in burning that a specially designed kiln has just been built using 60-pound rails double, in reinforced concrete, for buckstays, tied with 1¼-inch rods. The burning time has been reduced from eleven days to four, with a marked improvement in the percentage of first-class ware. The Dixie Texture Brick has a variety of colors—purple, brown, gray, terra cotta, heliotrope, golden brown—made all in the same kiln. Every brick



General View of Plant, Stack of Standard Dry Kiln in Background.

is sprinkled with iron spots produced naturally. The process is secret, but the owners say that no artificial substance is used. An Underwood gas producer burning system, installed by the Manufacturers' Equipment Co., of Dayton, Ohio, is attached to the kiln, making possible a high temperature at all times, likewise the short burning period, low fuel consumption, and superior product.

The Brick Plant.

The capacity of the plant is five million brick per year. They have one hundred and fifty acres of clay, which averages from 8 to 10 feet in depth, so expect to continue in the brick business for another generation or two. A steam shovel is used in the clay bank and the clay is hauled by their own

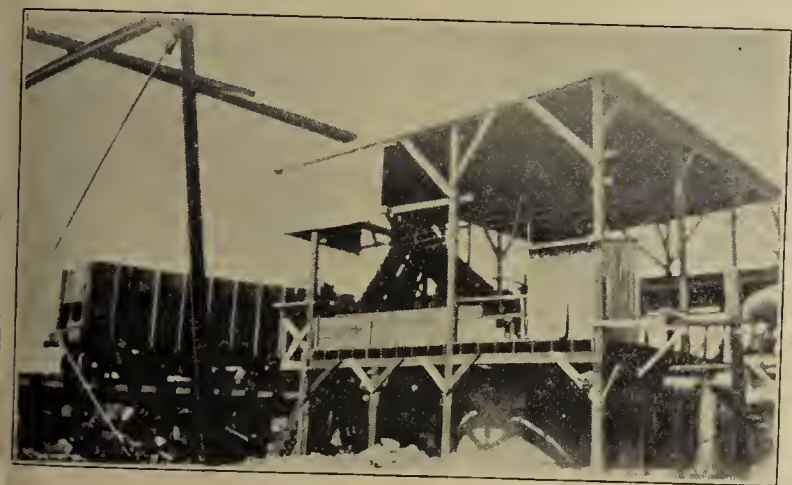
dummy locomotive. The machinery equipment was supplied by the Chambers Brothers Company, Philadelphia, and by J. C. Steele & Sons, Statesville, S. C. A part of the original equipment is a six-track Standard Dry Kiln, 116 feet in length, with a daily capacity of 30,000 brick. This dryer was erected in 1900, and the fact that it remains today practically as originally built is an indication of the durability of the Standard Dryer.

The brick are burned in up-draft kilns with producer gas.



Hauling in the Clay.

The adoption of the producer gas system was the turning point. With it the plant ceased to produce common brick and began to turn out "Dixie Texture" brick. By the use of cones it was established a temperature of 2,600 degs. F. was necessary in order to produce brick of proper hardness and bring out the variegated colors. The clay is peculiar; it seems as if nature had pulverized a mountain of ganister rock, mixed it with some plastic clay and spread the whole mass out in the coastal lowlands. There is no other clay we know of which is similar in nature or produces like quality in ware or like colors. In these common up-draft kilns Rytt is getting marvelous results with low fuel cost. To appreciate the accom-



The Gas Producer and Railroad Siding.

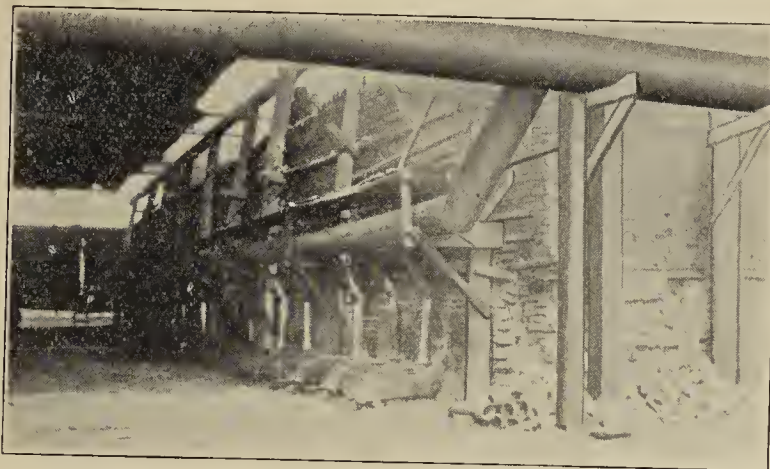
ishments, one must visit the plant and study the process and product. The latch string hangs out to all visiting brick manufacturers, to whom Rytt is always pleased to extend the glad and.

Our population increased fifteen million in a ten-year census period, or at the rate of a million and a half a year. and as the increase is still going on it furnishes a pretty good answer to the question of future building needs. A million and a half new people a year certainly means some new homes.

IMPORTING GERMAN BRICK INTO NEW YORK.

ACCORDING TO THE Dow Service Bulletin, under date of July 14, foreign competition is beginning to play an important part in the building construction industry along the Atlantic seaboard. Glass, tile, stone and brick are coming in apparently in quantities sufficient to have an effect upon building estimates.

The Germans, quick to see their opportunity to undersell a \$21.00 wholesale brick market, and the demand for American sizes, with little wastage in handling, are shipping brick conforming to American specifications to this port, hand-stacked in the holds of west-bound steamers, unloading them in coal buckets onto the trucks of New York distributors, at \$20 a thousand. Three million German brick came in, consigned to Frank D. Creamer & Co., last week, another shipload of the



Overhead Pipe Connection from Gas Producer to Kiln.



One of the Down Draft Kilns.

same quantity came in over the week-end unassigned, and another boatload was reported due next week for open market. There has been a rush of buyers to Europe to buy more German, Holland and Belgian brick, yet Hudson river manufacturers are selling all the brick they can get to market at \$21 a thousand wholesale (for delivered price, add handling, haulage and 10 percent), there being no Hudson river brick for sale in the open market here at the week-end, with Brooklyn taking the bulk of the offering.

If you can sell the women folks on the brick home idea it will help a lot, enough in fact, to suggest that perhaps our sales efforts in the past have been directed too much to men and not enough consideration has been given to the feminine factor in this good home stuff.

BRITISH BRICKS FOR BRITISH ROADS.

Possible Opportunity for American Bricks.

W. F. Doty, American Consul, Stoke-on-Trent, England.



AMERICAN BRICK MANUFACTURERS probably will take interest in a new departure in road construction in Great Britain, that of introducing brick paving as a substitute for various sorts of bituminous road pavements. Doubtless the British Paving Brick Association, which came into being lately, will appeal to the patriotism of various communities in the United Kingdom, to make use of British bricks, while, on the other hand, manufacturers of bricks in the United States and in other foreign countries might seek to supply a very considerable quantity of bricks to this country. In Staffordshire, there are numerous deposits of marl from which bricks in large quantities are made. Still, opportunities may arise when American manufacturers could obtain cheap freight for their bricks practically as ballast for American ships destined to pick up cargoes at ports in the United Kingdom or reasonably adjacent thereto.

It is advisable to cite a report published in the Staffordshire Sentinel, issue of May 9, 1923, which was based very largely on statements made by Mr. E. Simpson, works manager, Brickworks Department, Berry Hill Collieries, Ltd., Fenton, Stoke-on-Trent.

"There was a reference by a motorist in 'Crocks and Crazes' in the 'Sentinel' the other day to the brick-paved road near Stone, which the motorist speaks of as affording very smooth running."

Mr. E. Simpson Writes on Brick Paved Roads.

"This reference has led to Mr. E. Simpson, works manager, Brickworks Department Berry Hill Collieries, Ltd., to send us further information on the subject of brick-paved roads. Mr. Simpson writes:"

Heavy Traffic Requires Brick Roads.

"In view of the heavy transport now being used on the roads, the brick manufacturers of the country have for some time been holding meetings with a view to bringing before the public notice the use of bricks for paving purposes."

British Paving Brick Association.

"To this end, an association has been formed, named the British Paving Brick Association."

Brick Roads in the United States

"In America there are over 700 cities which have been laid with no less than six and one-half million square yards of brick roads up to March, 1914. As far back as 1879, the first brick pavement was laid in Charleston, West Virginia."

Experiments in England in Brick Paving.

"Mr. Simpson sends a copy of the 'Nottingham Journal' of 23rd March, in which there is a sympathetic article, suggesting experiments in Nottingham. He also sends the 'British Clay-Worker' for February and April, and says: 'The February issue contains a lecture by Mr. A. E. Brown, B. Sc., on the suitability of bricks for paving purposes. There are also several photographs of brick pavements in America. The April number contains photographs of roads laid at Birmingham and West Bromwich, which the writer had the pleasure on March 20, of inspecting, along with a number of brick manufacturers, and I am pleased to say that the roads looked splendid.'"

Common Brick and Inferior Firebrick Clay.

"The Midland Brick Association have supplied the bricks for these experimental roads. Whilst blue bricks are mentioned particularly, blue bricks are not absolutely essential. The quality of bricks used in America are made out of shale and inferior firebrick clay'."

Enlisting Interest of Borough Surveyors in North Staffordshire.

"Mr. Simpson has sent copies of the 'British Clay-Worker' to all Borough Surveyors in the District, including Stafford,

Publication "Truth" Summarizes Information Concerning Brick Roads.

"Mr. Simpson also sends to the 'Sentinel' a copy of 'Truth' for March 14th, which under the heading 'British Bricks for British Roads,' written by the writer of 'Motors and Aircraft,' lucidly sums up the information on the subject. The 'Truth' article is so well worth reading by motorists and road makers, that we now proceed to quote it in full as follows:

Bricks Used Extensively in Great Britain Except for Paving Roads, But Largely Used in the United States.

"British bricks have been used in this country for well-nigh every conceivable purpose except main-road surfacing, which is all the more surprising in view of the very extensive character of the brick-paved streets in the United States. There, we are told, in a very interesting paper read by Mr. A. E. Brown, B. Sc., at the Institute of Clayworkers lately, over 700 cities had been laid with no less than six and one-half million square yards of brick roads up to March, 1914.

As far back as 1870, the first brick pavement was laid in Charleston, West Virginia, by a private citizen, and though the experiment was ridiculed at first, the city copied it some two or three years later, and the pavements then laid were in good condition in 1900. Cleveland, Ohio, began in 1889, and in 1913, had over 328 miles of brick streets. Kansas City can also boast of 850,000 square yards of brick streets, half of which are over fifteen years old, and the other half over ten years old, and yet less than 30 per cent of these streets have ever needed repair. In the current issue of the 'British Clay-Worker,' a striking photograph is given of one of these streets laid twenty-four years ago, and which appears to be in splendid condition even now.

In this country the only samples of brick-paving are the short experimental sections in Sherlock street, Birmingham. Stone, Staffordshire, and Kingswinford, which were sanctioned by the Ministry of Transport, who paid half the cost of their construction. Mr. Brown claims that all the American authorities on road construction are agreed that the brick road, as now laid, provides the ideal paving, in that it is impermeable, durable, gives a perfect foothold, and requires the least tractive force. Moreover, it is cheap to lay, easy to repair, practically noiseless, and, what is very important, is suitable for all gradients."

Comparative Cost of Brick and Other Roads in the United States.

"Here are some figures which our road authorities might well seriously consider relating to the average cost per annum on a trial road between Philadelphia and New York. They were given in a report issued last year, after eight years' use—1913 to 1920: Brick, seven sections ½d. (1c; rate today L1 equals \$4.605, used in exchange in this report) per square yard; bituminous macadam, eight sections 3½d. (7c) per square yard; concrete, five sections, 8½d. (16c) per square yard; bituminous concrete, six sections, 6d. (12c) per square yard."

Brick Roads More Durable Than Concrete or Macadam.

"Four out of five concrete sections were partially or entirely resurfaced in 1916 or 1918, and one bituminous macadam section was reconstructed in 1914. But the important thing is that only three sections lasted the entire eight years without any expenditure for maintenance, and they were of vitrified brick."

Very Large Expenditure in Maintaining and Constructing New Roads in Great Britain.

"I hardly know whether to blame our brickmakers or the Ministry of Transport and the road authorities for neglecting the possibilities of the brick road, but it seems passing strange that while close on £60,000,000 (\$275,300,000) a year is being expended on the maintenance of our highways and new constructions, not a penny of it has been collected for any new brick-paved main road.

The only use of bricks in roadmaking so far—old bricks, I need hardly say—has been for filling in the foundations of old and new roads."

Tar and Bituminous Compounds Unequal to Heavy Strain of Present Road Traffic.

"Everything has given way to tar and bituminous compounds, many of which are wholly incapable of bearing the stresses of modern traffic for more than a few months; indeed I have seen sections of newly made bituminous roads torn out of shape into waves and corrugations even before the whole work was completed. No one seems to know what is the ideal road material. The road experts differ widely on the subject. And if the advocates of the several bituminous processes disagree as to what is the best material, we need not be surprised when they rule out as impracticable concrete and bricks.

One thing, however, is fairly certain, and that is that no one material can meet all needs, and that there is ample room for experiment."

Brick Roads Superior.

"If the brick road is one of the best—and I am strongly impressed that it is, by what I have read about it lately—then it ought to be given a fair trial, and if successful, suitable encouragement. The right kind of brick is, I understand, available, and the only questions at issue are the methods of grouting and the way the road bed is made. The bricks can be laid on a concrete foundation for the low total cost of 8s. 9d. (\$2.01) per square yard.

The outcome of Mr. Brown's paper, and the discussion following it, was the formation of a paving brick committee. They will know how to deal with the technical experts, but what is equally important is that the municipal mind should be awakened to the fact that it has got to take into account any and every kind of material that promises better and more lasting results than the various tar mixtures now so lavishly employed."

Motor-vans Replace Canal Boats and Railway Freight Cars Considerably, Requiring Substantial Roads.

It will be observed from the above verbatim citation, that roads in Great Britain are being severely damaged by the exceedingly heavy traffic passing over them at present. Motor transport vans, carrying very heavy loads, are rendering most satisfactory service in conveying goods from such centers as Stoke-on-Trent to Manchester and Liverpool for shipment abroad. Not long ago one of the directors of the North Staffordshire Railway, (Col. Robert Heath), openly admitted that railways and canals were likely to give place, in the near future, to a very considerable extent to motor-vans of

very large type. Pottery ware can be loaded upon such motor-vans at 10:00 o'clock in the morning and transported to Liverpool, (52 miles distant by the ordinary route) and placed on board steamers by 3:00 o'clock that afternoon. The convenience of such an arrangement compared with the slower canal boats and railway freight cars can be readily perceived. All this points to the prediction that a very substantial type of road, presumably brick pavement, will replace the less satisfactory bituminous types of roads found generally now in Great Britain.

LOS ANGELES THE MECCA FOR MEMBERS OF THE COMMON BRICK MFRS. ASSOCIATION IN 1924.

CALIFORNIA IS ONE of the leading States in the whole United States in the matter of building, and this is particularly true as it pertains to the increase in permanent building materials.

The Directors of the Common Brick Manufacturers' Association of America, meeting in Cleveland recently, voted unanimously to run excursion trains through to the coast in early February for the accommodation of brick manufacturers and their families who will attend the annual meeting in Los Angeles the week of February 11. This is the first time that a national brick manufacturers' convention has been held in the Far West.

With the unprecedented building program of the past few years in Southern California, that section has become a brick producing center of the first magnitude, ranking only slightly below that of Chicago and the Hudson River. The coast states are particularly successful in the brick industry through their co-operative efforts in advertising and promotion. California, Oregon and Washington have practically a one hundred per cent representation in the Common Brick Manufacturers' Association. These states have outdone many of the eastern organizations in the magnitude of their advertising efforts.

According to the president of the Common Brick Association, the high development of the brick organizations of the coast was a prime element in influencing the association to take the brick men of the East to Los Angeles in 1924. "We want to learn how they do it. We have been surprised to note that Los Angeles ranks next to New York and Chicago in the volume of its building permits month after month, and we know of the phenomenal success of the brick plants in all the coast states. We may learn something from our western brothers, and it is with that in mind that we propose to make Los Angeles the mecca of the men of this industry during next February."

Special trains are being arranged with starting points probably at Albany, Chicago and Kansas City. An eastern train will be consolidated with those originating in Chicago, and the Kansas City trains will consolidate with the Chicago trains at Denver. A day will be spent in the Colorado metropolis, during which a meeting of the brick manufacturers of that section will be held. The train proceeds in daylight through the Royal Gorge, and will stop for a day's sightseeing and business meeting in Salt Lake City. Another day in sightseeing will be spent in San Francisco, the trains arriving in Los Angeles in time for the opening of the meeting on February 11. The return trip will be by the way of San Diego, El Paso, San Antonio and Chicago.

The Common Brick Association is arranging a rate for the brick manufacturers and families and friends that will include all transportation, Pullman reservation, meals en route, and sight-seeing trips. This rate from Chicago will

be below \$300, it is expected, and brick manufacturers, both members and non-members of the association are permitted to bring with them a limited number of their friends at the special rate.

Although the western convention offers opportunities for a most attractive and interesting trip, the business of the convention is in no way to be neglected. There will be one session daily, held at the Hotel Biltmore, on each of the first four days of the week. The convention will be as important and as much an inspiration to the brick manufacturers as have the meetings of this association held in the past. At the same time those attending will have an opportunity for visiting under the most favorable conditions all the principal points of interest on two of the most favored rail routes from coast to coast.

Brick manufacturers, both members and non-members of the association, who desire to take advantage of this trip, should file their reservations with the association at Cleveland at the earliest possible time.

Written for THE CLAY-WORKER.

CLAYWORKING NEWS OF LOS ANGELES AND SOUTHERN CALIFORNIA.



WITH the demand for pottery products and especially architectural terra cotta and ornamental faience tile outstepping the production in Southern California, the firm of Gladding, McBean & Co. of San Francisco, largest and oldest pottery concern west of Chicago, has established a firm foothold in Los Angeles. Control by that company of Tropico Potteries, Inc., one of the foremost clay products firms in this section of the country has just been secured.

Announcement of the consummation of the deal was made by B. M. Wotkins, president of Tropico Potteries, Inc. and vice-president of Stephens & Company, investment bankers of Los Angeles. And while no figures were made public, experts in clay products business believe that \$500,000 was invested in the transaction by the Bay City concern. The value of the property is estimated to be in excess of \$1,000,000.

Tropico Potteries, Inc., was incorporated in 1920 by Mr. Wotkins and his associates in Stephens & Company, after which the new corporation purchased the properties and assets of the Pacific Minerals and Chemical Company, located largely near Tropico Station. F. B. Ortman, clay products expert, at that time chief ceramic engineer for the Northwestern Terra Cotta Company of Chicago, was brought to Los Angeles to manage the new plant. Immediately its business forged ahead. Its success was considered phenomenal, and its products were in such demand that in spite of expansion of its works, the company was constantly behind in filling orders.

And today the demand for pottery products in Los Angeles and Southern California is not only continuing strong but is steadily increasing. Architectural terra cotta has been one of the principal features of the Tropico concern, and this product is being used extensively in the large office buildings springing up in many parts of the city. Among the notable of these buildings is the new Bank of Italy structure for which the American Institute of Architects awarded Tropico Potteries, Inc., the prize for turning out the highest type of material.

In addition to its plant at Tropico Station and the industrial site it occupies, Tropico Potteries, Inc., owns mineral deposits in San Bernardino county and conducts extensive clay mines near Corona and Elsinore.

The recent organization of the California Common Brick Manufacturers Association has been hailed with cheers by the brick industry of the State. Primarily, the association proposes to do everything possible to stimulate the use of bricks in construction. Extensive advertising and educational programs are being mapped out, and the industry is well represented with samples of brick and a brick bungalow at the Motion Picture Exposition at Los Angeles.

Twenty-five cents a thousand brick sold by members of the association will be paid by the manufacturers to the organization to be used in the advertisement campaign. It is estimated that more than \$100,000 will thus be raised for these activities annually. At the meeting of the directors of the Common Brick Manufacturers' Association of America, held June 12, in Cleveland, Ralph P. Stoddard, secretary and general manager of the national organization, was commissioned to come to Los Angeles in August to complete the organizing of the new association and direct its activities. Mr. Stoddard is an expert in this line, and his aid will be greatly appreciated by the brick industry of California.

Mr. Stoddard was also instructed by the association directors to appoint a secretary of the California association. His choice was George Summerill, well-known to brick manufacturers in all parts of the country. Mr. Summerill will accompany Mr. Stoddard to Los Angeles next month, when the program advising the public of the advisability of using brick as building material will be put into operation immediately.

Officers of the Common Brick Manufacturers' Association of California are: W. P. Dwyer, of San Francisco, president; L. S. Collins, of Los Angeles, treasurer; W. W. Dennis, of San Francisco, vice-president.

Directors of the Common Brick Manufacturers' Association of California are: L. S. Collins, of Los Angeles, Walter Simons, of Los Angeles, W. P. Dwyer, of San Francisco, J. W. Rice, of San Diego, and W. W. Dennis, of San Francisco. Mr. Simons is president; Mr. Dennis, vice-president; Mr. Collins, treasurer, and Mr. Summerill, secretary.

Officers of the Los Angeles Common Brick Manufacturers' Association are: L. S. Collins, of the L. A. Brick Company, president; John Simons, of the Standard Brick Company, vice-president; J. A. Taylor, secretary, and Walter Simons, of the Simons Brick Company, treasurer. L. A. T.

OHIO CLAY NOTES.

BUILDING OPERATIONS on the new machinery and drying house of the Vitrified Products Co., Lisbon, is being rushed and it is expected that the new structure will be completed within the next 30 days. The new building will have twice the floor space of the one destroyed by fire last March. The building which has been practically completed will be protected from fire by sprinkling system. The boiler room and heating plant will be located at the same distance from the new building when there is no possibility of a blaze being communicated to the building. Former employes thrown out of work by destruction of the plant are being employed in the erection of the new plant.

The Bonnot Company, Canton, manufacturers of clayworking machinery and coal pulverizing machinery, have declared quarterly dividend of \$1.75 per share on preferred stock payable on or before July 1 to stockholders of record June 20.

The Massillon Clay Products Company, Massillon, Ohio, has been incorporated at Columbus for \$125,000. Walter T. Smith and Edward M. Ertle were named as incorporators. Mr. Ertle states the company is being organized for the purpose of building a brick plant for the manufacture of building brick on a 40 acre tract a short distance from the city. The company has not yet been organized and no officers have been named. The site in question contains large deposits of shale, clay and limestone, and it is planned to erect two kilns for burning brick and to increase the number to six as soon as sufficient finances can be obtained.

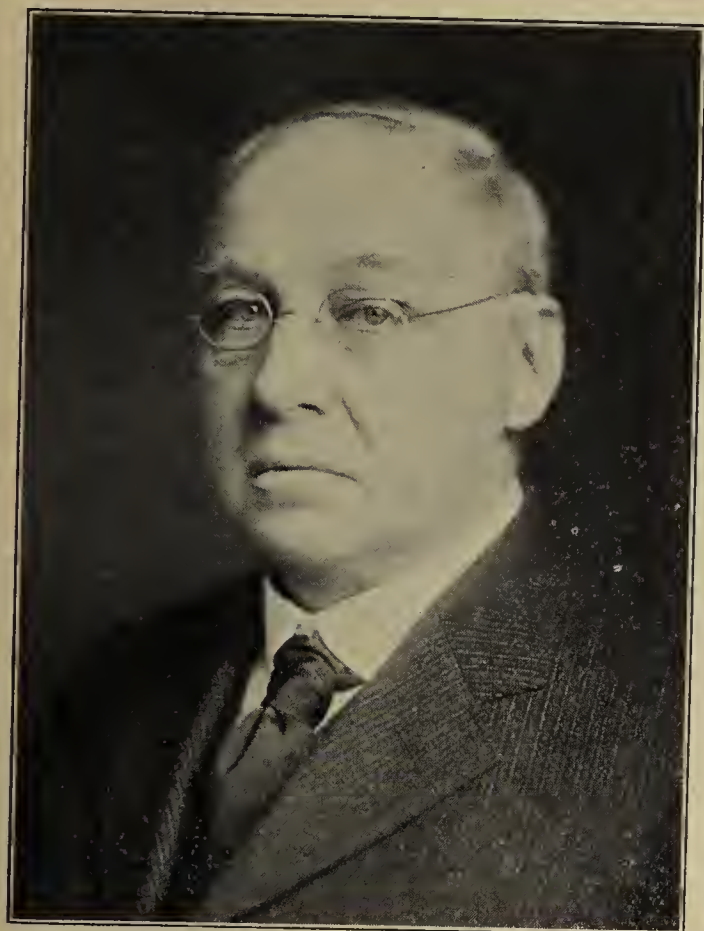
A. BUCKEYE.

OBITUARY.

DEATH OF LORENZ AULMAN.

AS BRIEFLY recorded in the June issue of The Clay-Worker, Lorenz Aulman, president of the Eagle Iron Works, Des Moines, Iowa, and general manager of the clayworking machinery department of that concern, died at Los Angeles, Calif., June 14. Mr. Aulman had been living in Los Angeles for three years, having established a branch office there in order to look after the trade of the Eagle Iron Works on the Coast. While Mr. Aulman had not been very rugged of late years, he was naturally of a genial, cheery disposition, and had never complained of more than ordinary ill health, so that his demise came as a distinct shock to his relatives and associates in Des Moines.

Mr. Aulman was sixty-four years of age and had spent nearly all of his life in building up the industry with which



The Late Lorenz Aulman.

he was connected at the time of his death. He suffered a broken leg a number of years ago, which was a shock to his system, and shortly after that he took up his residence in California hoping to regain his health. He was one of the pioneer business men of Des Moines, where he established himself in business in 1866. He had always taken an interest in the business and civic affairs of Des Moines. Mr. Aulman had a wide acquaintance throughout the clayworking industry, and had been a member of the National Brick Manufacturers' association for many years. He is survived by a widow, one son and one daughter.

DEATH OF MRS. JANE E. DENNIS.

After an illness of more than a year, Mrs. Jane E. Dennis, wife of F. W. Dennis, the kiln builder, died at her home in Norfolk, Va. Mrs. Dennis was born at Marden, Kent, Eng-

land, and came to this country with her husband many years ago, and settled in Norfolk. She is survived only by her husband.

RETIRED OHIO BRICK MANUFACTURER DIES FOLLOWING BRIEF ILLNESS.

Jacob J. Renkert, 75, retired brick manufacturer of Canton, died July 4, in Mercy Hospital, Canton, following illness of a week. Mr. Renkert suffered a general breakdown June 27 at his home, when he was removed to the hospital, where his condition grew steadily worse.

Born on a farm near Dover, Ohio, Mr. Renkert received his early education in the public schools of that section. He moved to Canton 33 years ago and founded the Royal Brick Co., which later was merged with the Metropolitan Paving Brick Co. He retired from business several years ago.

He is survived by one son, O. W. Renkert, Canton, president of the Metropolitan Brick Co., one daughter and seven grandchildren.

Funeral services were conducted from the home of O. W. Renkert.

NEW YORK PUMP MAN SUCCUMBS TO HEART TROUBLE.

Arthur T. Beach, president of the Beach Russ Company, well known manufacturers of pumps and president of the Abbe Engineering Company, one of the largest manufacturers of grinding and pulverizing machinery, both of New York, died at his home, 11 Crooke Avenue, Brooklyn, N. Y., on June 16th, in his 61st year. His death was due to heart trouble and was hastened by the death of his wife which occurred just one month prior on May 16th.

Mr. Beach was born in Hazardville, Connecticut, March 9, 1862, and came to New York thirty-two years ago when he founded the Beach Russ Company and in 1912 also became president of the Abbe Engineering Company. He was a prominent Mason and Shriner of Brooklyn and a member of the Commerce Club and Brooklyn Chamber of Commerce. He is survived by three sons all of whom were associated in business with him.

BRICK PRODUCTION AND SALES SHOW BIG INCREASES.

ACCORDING to Government reports production of clay fire brick in May amounted to 67,242,000 brick, as against 64,647,000 produced in April. New orders received in May called for 53,086,000 bricks as compared with 66,613,000 in April and 51,041,000 in May, 1922. Unfilled orders of clay fire brick at 107,352,000 on May 31, last, may be compared with a total of 120,564,000 on April 30, and 45,300,000 on May 31, 1922.

Of silica brick both production and sales in May advanced considerably over those for both April of this year and May of 1922. Face brick production and stocks on hand declined somewhat, although shipments exceeded those in both April of this year and May, 1922. Following are the official figures:

	1922		1923	
	May	April	May	
Clay fire brick—				
Production	46,794	64,647	67,242	thousands
Shipments	44,120	65,276	66,299	do.....
Stocks, end of month.....	152,259	157,685	158,864	do.....
New orders	51,041	66,613	53,086	do.....
Unfilled orders	45,300	120,564	107,352	do.....
Silica brick (computed)—				
Production	12,233	13,981	16,684	do.....
Shipments	10,704	14,363	17,995	do.....
Stocks, end of month.....	37,845	42,242	42,297	do.....
Face brick (32 identical plants)—				
Production	29,264	23,515	26,057	do.....
Stocks, in sheds and kilns.....	63,867	65,447	60,939	do.....
Unfilled orders	47,572	67,371	57,363	do.....
Shipments	29,202	26,423	29,421	do.....



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Business Good in Chicago.

Editor The Clay-Worker:

Regarding business conditions, wish to say that the first half of 1923 far exceeds that of any previous year over the same period. As to outlook for the balance of the season we believe there will be a lull during July, August and September, which has been our experience for many years; and then another rush until Christmas. The price of common brick in our section is \$12.00 delivered to the job, and \$10.50 at the yard. We do not anticipate any change in price this year.

Sincerely yours,

BACH BRICK CO.

Chicago, Ill.

Price Paid for Labor Advancing While Brick Prices Remain Stationary.

Dear Mr. Randall:

Replying to your query, the demand for brick continues good in this section. Our labor costs have advanced 30 per cent to 40 per cent the past year, with prices nearly stationary. Common or flue brick are selling at \$16.00 per thousand, while face brick bring from \$18.00 to \$25.00.

Very truly,

PATTON CLAY MANUFACTURING CO.

Patton, Pa.

Sales of Second Hand Brick Cut Demand for New Brick.

Editor The Clay-Worker:

Our sales the first six months of this year approximate 15 per cent more, in quantity of brick, than first six months of last year, and the outlook is good for the balance of the season. Second hand brick being sold this year interfere to a slight extent with the sales of new brick by the manufacturer, wrecking companies selling second hand brick at \$10.00 per thousand, or less, delivered. The average price for brick in this section is \$19.00 per thousand at the yard. Labor is 20 per cent to 25 per cent higher than last year, and materials are 15 per cent higher.

Yours sincerely,

SPRINGFIELD BRICK CO.

Springfield, Mass.

Speed Up Your Burning and Cooling.

Editor The Clay-Worker:

In the manufacture of clay products during a long period of time we have worked under a misapprehension or belief in regard to certain procedure in the process which in the light of more recent experience has proven how wrong we were. Following our belief and fearing to depart from the beaten path we have done many things many times which has reduced the earning power of our investment, lost us much

valuable time, retarded production and increased the cost of our finished ware.

In this we refer primarily to the process of burning and cooling of the product. We believed that it was absolutely necessary to go slow in water smoking—the period of dehydration—to go slow in the increase of temperature during the burning stage and even to hold it constant for a long time which we called the “soaking period” and finally after the waste of much fuel and the cost of much hard labor the burn would be finished, the kiln closed and sealed.

Then we believed the kiln of ware must be cooled like it was burned—very slowly, in fact the ware had to be cooled slowly in order to anneal, toughen, and harden the ware properly. It required days for this process to complete itself before the kiln could be opened and the ware removed. If a kiln of ware could be burned in six to ten days and cooled in four to five days, we had made a good record as it was possible to burn a kiln thirteen times a year which was considered good practice.

This slow process belief was one big fallacy; however, we should not be blamed so much personally for it, because the general fact was we could not go faster if we wanted to do so by reason of kiln condition about which we knew very little, but we could blame ourselves for our own ignorance, slowness, or dullness of comprehension.

Experience has taught and shown by actual demonstration that ware of the Heavy Clay Products variety can be watersmoked, burned, and cooled very rapidly without the least fear of injury to the product. Most down draft kilns will not work fast during the watersmoking period without mechanical aid. We now have modern mechanical appliances to supply this needed aid to make the kilns work fast in burning and in cooling. We now accelerate the burning and hurry the cooling by mechanical equipment properly applied.

This process of speeding up the work of the kilns increases production and not only makes the kilns more efficient by more rapid turn-overs but also increases the actual production of the whole plant. For example, if a ten kiln plant can be speeded up by mechanical means to permit each kiln to take one day's machine production more each month it increases the capacity by 40 per cent on a basis of 40,000 per day, machine output. Kiln accelerators and kiln coolers as now made and advertised in this journal will do that for you. Look them up and buy them for your plant.

X. Y. Z.

Confidence in the Future of Brick Industry.

Dear Mr. Randall:

We have the June issue of “Business and Financial Conditions” and for which please accept our thanks.

Business in this section is good, in fact extra good, or rather it could be good if it was not for the condition of labor. As you are no doubt aware of the fact that a large number of our negro labor has “Gone North” and that with all the large road contracts and city improvements the manufacturers find themselves up against it to keep their plants running. We have about 75 percent of a crew and they seem to be the scraps of the earth. Of course this will end within a few months, as the negro who is in the north will find that it isn't as pictured to him and he will return as he has always done, but, for the present we are getting it hard.

As to prices we are selling common kiln run at \$13.00 per thousand, F. O. B. cars at our plant. There are still a few brickmakers who have not as yet learned to figure cost and are selling about two dollars under us. We have seen them come and go for the past forty-two years and we just let them rave on and the end comes.

We see no reason why business should not remain good the balance of the year at least. It may be that it will slow down a little but we have great confidence in the future.

With kindest regards, we are,

Yours very truly,

THE E. A. POE BRICK CO.

Fayetteville, N. C.

An English Brick Man Sends Greetings.

Friend Randall:—

You will no doubt have heard that we are now making an attempt to get a real live British Paving Brick Association at work here, in the best interest of the people of this country, this should have been started years ago. However, we have at last got several short lengths of brick paving down, which is being watched with a great deal of interest I can assure you.

On May 25th, being in London visiting my daughter who lives there, I went to see Mr. Montgomery, the publisher of the British Clayworker, and to my surprise Mr. Montgomery told me Mr. Blair, of the National Paving Brick Association of the United States was over here, and would be calling at the office that morning. You can imagine, I think, my feelings when I knew this, and I asked to remain till he came. You have no idea how delighted I was to meet someone from the other side, and especially W. P. Blair. He told me he was just returning from the International Road Congress which had been held in Seville, Spain, and that Mr. Montgomery had asked him to stay over to attend the first, I think, conference of Paving Brick Manufacturers held in this country. Of course, I got an invitation to attend as well, the meeting being called for June 7th. In the meantime I had arranged to leave London for home on the 29th of May, and asked Mr. Blair if he would not go with us. I told him we should motor, and that he would get to see some of the roads we have in this country. I took him to my daughter's to spend the day, and he agreed to go with me, and spend a few days at my home.

The reason I was compelled to leave on the 29th, was on account of the Highways Committee of this Division going over our roads in the West Riding of Yorkshire. I got permission for Mr. Blair to go along with us, so that he has seen something like 450 miles of our roads here, and the many different ways we have of making them, and keeping them in repair, and no doubt you will hear more from him on this matter.

He spent in all some five days with me here and in London, and to say I was delighted, is putting it very mildly I can tell you. Now, Randall, I have had Mr. and Mrs. Salmen and their daughter to tea. I have had a number of my friends pleasure of entertaining you as yet. It seems to me that it's pleasure of entertaining you as yet. It seems to me that it's about time you took a trip over here, and looked me up, should be pleased to see you and to renew our long acquaintance again.

In the reminiscence of days long gone by, it was a treat to hear Mr. Blair on many matters, and one especially that you well remember, when you went out from Atlantic City on a fishing expedition, with several other of my brickmaking friends, and when you felt so sure that you personally would have the largest haul before the voyage was over. But alas, something happened after you had been out some little time, which caused you to excuse yourself saying that you thought you had better go down below, and see how Mrs. Randall was faring; don't imagine that I am blaming you for doing this I know very well from practical experience how it feels, but after your experience I don't think this would, or should, keep you back from the trip over here, and enjoy the cool

breezes of this English climate, at this time of the year, and again renew the old acquaintances, and see some of the brick paved roads that have recently been laid. I should be pleased indeed to see you, and will promise you a good bed, and full rations, (for the food control, thank God, is now over) for a few days.

You could well spend most profitably, I think, several weeks over in this country, in looking into the housing question as it has been carried out with the aid of the Government here, by the different local councils, borough councils, and county councils of this country, some 300,000 houses have been built, or are under construction and scarcely a fringe you might say of the matter has been touched, in providing houses for the people to live in here. The local council of which I am a member has built 86, and we have applied for a permit to build 50 more as we own the land for this number, and some of the streets, and sewers are all ready for the houses to be built along side of.

If my letter would not bore you, I should like to say that while in London with Mr. Blair the day before the meeting, I went with him to see some friends of mine who are in the brickmaking business, and in going along to their offices, we had to pass Westminster Abbey, in front of which is the monument of Abraham Lincoln. Mr. Blair had not seen this before, and with the short time he had to spend in London, I doubt if he would have seen it if I had not been with him. I wish you could have seen him at that time; he had been telling me some of his experiences on our way, and when we came to it, not a word was said, one could easily see that way down in his heart, feelings of which it is difficult to control, had taken hold of him, for the portrait shown in this monument is about as good as any I ever saw of this great man in the States.

I must now stop, and sincerely hope you will accept the invitation, and come over and spend a few days with one who, while living in England, has got a very warm spot in his heart for the United States. Best of good wishes, for you and your family, and all The Clay-Worker staff.

Yours very truly,

H. HAIGH.

Slaithwaite, England.

THE STOWE-FULLER REFRACTORIES COMPANY.

Announcement has been received from the Stowe-Fuller Refractories Company, Rockefeller Building, Cleveland, Ohio, under date of July 2, that the Stowe-Fuller Company, the National Fire Brick Company and the Minor Fire Brick Company, which have for many years been engaged in manufacturing and selling fire brick and refractory materials, have lately been consolidated into a single company under the name the Stowe-Fuller Refractories Company, which began operation as of July 2, 1923, and will conduct the business heretofore carried on by the above-named companies.

The Stowe-Fuller Refractories Company has also acquired a controlling interest in the Federal Refractories Company, manufacturer of silica, magnesite and chrome brick, and will handle the output of the Open Hearth Fire Brick Company, the Zoar Fire Clay Company, the Lock Haven Fire Brick Company and the Hite Coal & Clay Company. This makes this company self contained and in a position to mine, manufacture and supply every class of refractory material required by a steel plant and other manufacturers requiring different refractory fire brick materials for their special work. From its various plants and properties the new company will be in position to supply refractory materials to best advantage from a railroad haul standpoint.

The management of the company will continue in the hands of the same officers who have heretofore operated the various properties. Mr. Charles B. Stowe is the chairman of the Board of Directors of the new company, Mr. Charles E. Kapitzky is the president, Mr. Thomas Kemp, the 1st vice president and operating manager, Mr. Joel H. Fuller, the 2nd vice president, and Mr. Charles J. Steitz is the secretary.



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FORTIETH YEAR OF PUBLICATION.

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OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 80. July, 1923. No. 1

CURRENT COMMENT.

Yes! We have no Bricklayers!!!

* * *

If there is a brick man not busy these days he is the exception.

* * *

The prosperity wagon has slowed down a bit for safety, but is still going good.

* * *

Accelerating the cooling down of a burned kiln is a popular brickyard sport these days.

* * *

In selling brick, as in making them, the element of good and persistent work plays an important part.

* * *

Sewer pipe piles are now becoming conspicuous among the clay products showings in retail lumber yards.

* * *

Telling the worker to use his head is not enough. There is a question of how to use it, and in what direction.

* * *

The ball bearing wheelbarrow may not make the load lighter, but it makes it move easier, and that helps some.

* * *

Notwithstanding all the propaganda against it the fire loss of the country keeps mounting at a rate that should make us pause and consider.

* * *

After Mr. Bok gets the prize solution of how to prevent wars among nations he might try his hand at offering a prize for the best plan to preserve peace around the family hearthstone. We offer here the good brick home idea as a starter.

Yes, and it looks like it will prove to be a good year in the firebrick division, too.

* * *

Oil burning in the brickyard is a better idea to experiment with than oil stock speculation as a get rich quick scheme.

* * *

The weather has been such of late as to make us wonder about ways and means to utilize the waste heat from the sun.

* * *

Here's hoping that some of the professional reformers will take a long vacation and give the ordinary folks a chance to rest up.

* * *

Better not overlook the fact that there is such a thing as concrete competition, for the cement folks are very active and progressive.

* * *

Cutting down variety in the drain tile industry is one good way to help cut production cost that is making fair progress these days.

* * *

Well, at that the bricklayer has as much right as any one to an auto, and he is getting money enough to both own and run one if he so desires.

* * *

Remind the home builder that the permanent structural material that seems to cost more really makes homes built of it cost less in the long run.

* * *

While the home trade is the big factor in the clayworking industry we are steadily building up an interesting export trade both in heavy ware and pottery products.

* * *

One of the good signs of the times is in a noticeable better temperature control in brick burning. And along with it goes a more even distribution of heat throughout the kiln.

* * *

It takes real work and not just talk to carry out our good ideas about standardization—the work of putting the theories into practice—and the time is here now for that kind of work.

THE COST OF STRIKES AND DEPRESSIONS.

A recent report shows that the strike of the railway car men cost over a million dollars, and there are various estimates as to cost of the coal strike of last year which ran into millions. Now comes an estimate of the National Bureau of Economics Research that the business depression in 1921, caused an income loss of six billion dollars. Also that one-sixth of the people employed in the United States lost their jobs for a while at least. The reason for linking this up with strike costs is because of an actual relation. Unreasonable demands which leads to strikes also bring about industrial reaction, unemployment and loss of income which amounts to startling sums. We need to confront these figures once in a while because they are good warning signals against selfishness and extortion.

PRICE TRENDS.

There is very little upward trend in prices at the present time but the persistent demand for higher wages may bring on an unusual complex. The inclination and desire everywhere is to hold prices level or ease them down a little because of the feeling that continued advances will mean a let up in the volume of consumption. In fact there is already some let up and this is leading to the tendency to shade

prices in some new commodities, which in time tends to limit buying to immediate needs and will soon make toward easier going. Meantime, however, there are reports of higher wages a typical example being a \$2.00 a day increase for bricklayers of New York. Also we hear of increases other places and talks about demands for still further increases.

The answer to such a trend is either higher prices or a slow down in industry with unemployment. We are at a stage now when it will take a little time to bring a decision, but the general feeling is that any further upward trend in prices will bring on a reaction and a let up in building operations and in industry generally.

TENTATIVE PRINCIPLES OF TAXATION.

Taxes are always unwelcome and often they are burdensome. For this reason we naturally have a lot of fussing about taxes, and we have more than the usual amount of it this year, partly because of imperfections in tax systems, partly because of politics, partly because we have had an unusual burden of taxes because of recent war. Recently committees and representatives of different organizations have been wrestling with this subject through the co-operation of the National Association of Manufacturers and out of this has come some fairly clear ideas. It is recognized that all costs of government must be paid, and that in paying it everyone must do his part in the best way he can. There has been evolved out of this some tentative principles of taxation the substance of which is contained in the following paragraphs.

"Every person should be taxed in just proportion to his ability to pay.

"The form and amount of taxes should be definite and neither discourage individual initiative in the operation of existing production nor the establishment of new enterprises.

"A tax on net personal income justly graduated according to ability to pay is a fair measure of taxation.

"Discriminatory excise taxes growing out of war emergencies, should be repealed.

"Taxes should be definitely assessed in advance of collection."

LABOR COST ITEMS.

We will perhaps never settle the question of just what percentage of total buildings costs are represented by the item of labor cost, but every once in a while we get some rather emphatic reminders that the labor item is often a major one notwithstanding the claim often advanced that a little difference in wages does not make a great difference in construction costs.

The other day there was a little job of making a concrete floor in a small garage, and a contractor who was working next door was asked to bid on it. His bid was \$55, which seemed high, so material was bought, and the material for the job only cost \$15.00 so the other \$40.00 would be represented by labor and profit.

Another contractor was asked about brick work, and he said that the best sub-contractor he had on brick figured on brick veneer jobs on the basis of \$25.00 per thousand for laying, counting seven brick per square foot, and counting the wall space solid, that is making no allowance for openings, as he figured that working around the openings consumed as much time as it would to run solid work.

There was a time about fifteen years ago when we used to figure that brick laid in the wall would cost from \$12.00 to \$15.00, that is from \$8.00 to \$10.00 for the brick, and from \$4.00 to \$6.00 for the laying per thousand. Now we have a

laying cost figured here of \$25.00 a thousand, and counting this and the increase in the cost of brick itself because of the higher wages involved, and higher coal prices due in turn to higher wages, we have a pretty heavy handicap to overcome in pushing brick for home building work. Plainly, too, the labor item is a big factor in the cost all the way along the line, not only in producing brick, but more particularly in laying it in the wall.

THE BUILDING RECORD.

With what has already been done and what is under way it seems that this year will beat all previous records in building even if it does go a little lower in the latter half.

A study of the graphs made from figures in the building industry shows that there is practically always a peak period or high point in the spring months, generally March and April, then some let down through the mid-summer period, with a revival in the late summer and fall and continuing until bad weather curtails work during the winter months.

The up peak was unusually sharp this year in the spring and it came early, so the summer let down started early, too, and this may be taken as a hopeful sign that the fall pick up will come early. Though what really happens in the fall will depend some upon the progress of industry and on conditions of prosperity among farmers and especially the wheat growers who have before them the problem of maintaining fair prices in the face of a surplus.

The figures available on building progress are mainly those of about 200 larger cities of the country and do not include except by guess work and estimate the work in the smaller cities and towns and the country districts. It is well to bear this in mind this year because it is these districts which promise to furnish a good part of the late summer and fall business and play a big part in the demand for building material this fall.

BE A GOOD MIXER.

The business man who has not the faculty of getting along with people, carries a handicap difficult to overcome. There is a difference between being a silent, neutral, non-combative sort of an individual, who never has a disagreement with any one, and a cordial, interested, sympathetic person, who has the ability to win friends and customers.

To get along with people well, it is not necessary to act the stoical part of an Indian cigar sign man. Try rather to be friendly and courteous and kindly and warm-blooded, and to call to the surface the best impulses in those with whom we come in contact. Most folks find it easier to forgive and like an impulsive individual who makes an honest mistake sometimes, than an indifferent, crochety, or superior mortal. A good mixer is one who takes an interest in the other fellow.

BEAUTY AND RHYME.

THE AMERICAN CLAY MAGAZINE publishes a picture of a becoming lady bricklayer, Mrs. Florence Thompson, whose husband runs a bricklaying school in New York City, and says some pleasant things about her in explaining the reasons why. But it is over on another page that they spring this one:

"I'd like to be a bricklayer,
And on a scaffold stand;
A bonus in my pocket,
A week's wages in my hand."

ILLINOIS MAN RECOVERING FROM OPERATION.

We are advised that Mr. O. W. Dunlap, the head of the Dunlap Manufacturing Company, Bloomington, Ill., manufacturers of clay screens, has been taking an enforced vacation, which he has spent at the hospital, following a severe operation. At last reports he was well on the way to complete recovery.

ENLARGING PLANT TO MEET DEMANDS.

The Lancaster Iron Works, Lancaster, Pa., is making extensive improvements at its plant, including one 54x106 addition and another 54x144 to the machine shop, the latter for an erecting shop. The company has found this expansion necessary to enable it to meet the demands for clayworking machinery. Mr. James P. Martin is the manager of this department.

MAYOR HYLAN OF NEW YORK CITY SEEKS BRICKLAYERS AMONG CITY EMPLOYEES.

Mayor Hylan recently suggested enlisting all New York City employes who know the bricklaying trade to relieve the school construction crisis. In a letter written to George T. Ryan, president of the Board of Education, he made known that he had asked all heads of the city departments to get a list of those who had worked as bricklayers before entering municipal employ. It is the Mayor's idea, according to the New York Tribune, to give these men leaves of absence without pay to work for the contractors who are buliding new schools.

In reply to the Mayor's letter Mr. Ryan wrote:

"I think you have struck a very wise and happy suggestion in asking the various departments for a list of those employes now in the service of the city who formerly were employed as bricklayers. I have very little doubt that when the list is presented to you it will be a very formidable one, and if your suggestions are carried out and the men are patriotic enough to recognize the great emergency that exists in the city today in the erection of school buildings. I am sure that they will be willing to conform by taking a leave of absence and employing themselves in construction work on our schools.

We suggest that the New York City officials acquaint themselves with the Mann Patent Trowel.

WANTED.

Expert dry press brick setter, at Eldon, Ia. Address all communication to IOWA CLAY PRODUCTS COMPANY
Attention, M. C. WILLIAMS.
61 c Eldon, Ia.

WANTED.

One hand brick cutter.
One end-cut, automatic brick cutter.
One building tile cutter, for 12x12-inch, or larger.
Address, A. B. C.,
72 d care Clay-Worker.

FOR SALE.

The property of The Clay Products Manufacturing Company is to be offered for sale at Monroeville, Ohio, on Saturday, August 4th, at 1:30 o'clock p. m.
71 c

FOR SALE.

Two high-class, vertical type, self-lubricating, American Blower Co., steam engines, 9x8 cylinders, capable of developing 35 H. P. at moderate speed.
J. C. BOSS ENG. CO.
61 f d Elkhart, Ind.

FOR SALE.

Brick, tile and building block plant, fully equipped. Three kilns with Boss system for drying. Can make either common brick or pressed brick and from 3 to 8-inch drain tile and 5 by 8 by 12-inch building block. Seven acres of land, good machinery and buildings, located on switch and within shipping distance of Detroit. Address all communications to The Clay-Worker, or
CROSWELL BRICK & TILE CO.,
71 c Croswell, Mich.

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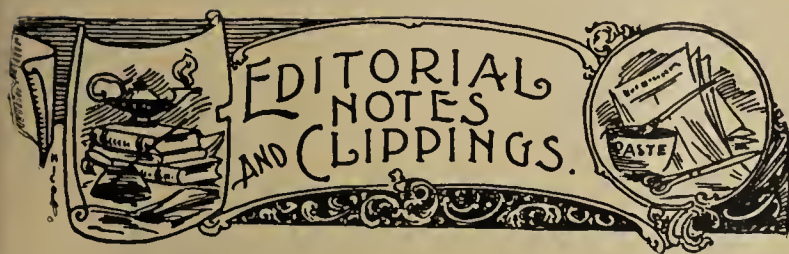
CHICAGO MEN TAKE OVER SHEFFIELD PLANT.

B. F. Weber, president of the National Brick Company of Chicago, and Mr. Cook, general superintendent of the company's plants, have formed a company and taken over the plant of the Sheffield (Ill.) Shale Tile Company. Richard Hopkins will be superintendent of the Sheffield plant. The plant which was erected in 1908 has not been operated this season. The new owners will make a number of improvements, bringing the equipment up to date, and will specialize in the manufacture of face brick, continuing, however, the manufacture of drain tile and hollowing building block.

FOR SALE FULLY EQUIPPED FACE AND FIRE BRICK PLANT

Now running located in railroad and industrial center of the Northwest, which readily absorbs output. Fifty years clay supply, ample storage, both stiff-mud and dry-press machinery, continuous kiln, steam and electric power. Labor plentiful; decided freight advantage over nearest competitors. Other business requires entire attention and will sell on very favorable terms. Might lease on profit-sharing basis to responsible parties who would furnish working capital. Write

KAM,
Care Clay-Worker.



The Shenango Clay Company, of New Castle, Pa., has made an application for a charter.

F. B. Summers and George A. Anderson are erecting a brickmaking plant at Santa Paula, Calif., where they will manufacture a red building brick.

The brick manufacturing plant at Hamburg, Mo., owned by A. Gallant & Son, St. Louis, Mo., was destroyed by fire recently. The plant has not been in operation for some time.

The W. M. Layton Brick Company, Four Oaks, N. C., has leased the plant of the Meadow Brick Company, and will operate for a daily production of about 40,000 bricks. Mr. W. M. Layton is head.

Brick and tile makers of the Birmingham Ala., district say that the clay industry is better than for some time. All of the plants are being operated on full time, and the products are finding a ready market.

The Yadkin Ceramic Company, with a capital of \$50,000, has been incorporated at New London, N. C., and will manufacture brick. The incorporators are: G. W. Isenhour, Rufus Isenhour and W. H. Meigs.

The Veedersburg Brick Co., Veedersburg, Ind., is making a number of improvements at the plant. They are turning out 30,000 brick a day for which they find a ready sale. In fact, they have enough orders on the books now to keep them busy until the latter part of the year.

The Birmingham Clay Products Company, with their plant located at Sibley, Ala., and their offices in Birmingham, are manufacturing a buff colored brick which is proving quite popular. Many of these buff brick are going into handsome homes and business blocks in Birmingham.

The Wheeling Tile Company, of Wheeling, W. Va., will erect a \$10,000 brick kiln on Wood street, between Thirty-first and Thirty-second street. The structure will be 100 by 60 feet and the contract for its construction has been awarded to Harry S. Cunningham, a Wheeling contractor.

Florida China Clay Co., Leesburg, Fla., will install additional mining and power equipment at its properties, including grinding and pulverizing machinery for considerable increase in capacity. Company was formed a few months ago with a capital of \$500,000. L. A. Morris, secretary and treasurer.

The Alabama Brick and Tile Company, W. B. Neher, manager, are installing over \$4,000 worth of new machinery in their plant at Decatur, Ala. This is one of the biggest brick and tile plants in that section of the state of Alabama. They are shipping much of their products all over the southeast.

The Childersburg Brick Company, Childersburg, Ala., recently organized with a capital of \$250,000, as mentioned in the June issue of The Clay-Worker, is considering the erection of a new plant with power house and machine shop estimated to cost \$100,000. L. L. Stephenson, Sr., heads the company.

According to officers of the bricklayers' union, and contractors also there is a greater demand for bricklayers at the present time in Birmingham, Ala., and in other cities and towns of Alabama, than ever known before. Union heads say that every bricklayer in Alabama is at work, and that there is work for more men than can be had. In some of the

smaller towns of Alabama work has been held up on brick buildings, owing to the fact that brickmasons were not to be had at any price.

The Murray Roofing Tile Co., Cloverport, Ky., suffered a \$15,000 loss by a fire which destroyed their storage house and damaged railroad cars loaded with material. The loss was covered by insurance.

Samuel Bettie, Jr., Edward S. Sharpless and S. Rusling Leap have incorporated the Silica Brick & Products Co., at Camden, N. J., with offices at 506 Market St. They will manufacture high grade silica brick.

The holdings of the Degans Fire Brick & Clay Company at Coal Grove, Va., has been purchased by the Carlyle-Labold Company of Portsmouth, Ohio. A plant will at once be erected for the manufacture of building brick.

The Clayton Brick & Tile Company, of Dubuque, Iowa, has been incorporated with \$250,000 capital stock, by F. A. Henker, W. H. Meuser and others. They will manufacture building brick, roofing tile and sewer pipe.

The Acme Shale Brick Company, Buffalo, N. Y., is building a large brick and tile plant at Shaleton, N. Y., near Buffalo. L. D. Walrath is general manager of the company, and expects to have the plant ready for operation in the early fall.

The Cumberland Valley Fire Clay Company has been incorporated by Arch E. Craig and R. S. Flannegin of Imperial, Pa., and W. C. O'Reilly, Jr., of Pittsburgh, Pa., for the manufacture of fire clay products. The company is capitalized at \$100,000.

L. V. Brandenburg, John B. Bellis, Amos Brandenburg and James M. Dale, of Cushing, Okla., have organized a company which will erect a plant for the manufacture of brick and other clay products. The first named gentleman is the head of the concern.

At a recent meeting of the directors of the Purington Paving Brick Company, Galesburgh, Ill., it was voted to purchase the plant and holdings of the Barr Clay Company at Streator, Ill. The Purington Company will increase its common stock from \$1,000,000 to \$2,000,000.

The Marietta Rustic Company, manufacturers of clay fire logs at Zanesville, Ohio, will make some extensive improvements in their plant, including the erection of another kiln, which will make it the largest plant of the kind in the country. The work of making the logs is done entirely by hand, with the exception of grinding the clay.

Plans are being made by the Orangeville Brick and Sheet Products Company, for the building of a \$100,000 brick plant at Orangeville, Pa. J. E. Mecusker, an experienced brick man, of Cumberland, will have charge of the plant when completed. The addition to the plant will afford employment to many more workmen.

The Mahoning Valley Brick Company is building an immense plant at DuBois, Pa., which it is hoped to have ready for operation by the first of September with a capacity of 50,000 brick per day. The fire clay deposit which covers forty-seven acres is thirteen feet deep. The company is headed by H. J. Gerber, of Brookville, B. M. Williams, treasurer, and T. S. Williams, secretary.

The new plant of the Sioux City Brick and Tile Company, Sioux City, Iowa, which replaces the one destroyed by fire last February, is now in full operation, with a capacity of fifteen per cent over that of the old plant. The new plant which is modern in every respect represents an investment, according to D. P. Mahoney, president of the company, of \$175,000, and is the largest common brick producing unit in

(Continued on Page 74)

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing the Commissioner of Patents, Washington, D. C., and enclosing 10 cents for each patent wanted. In ordering, give patent number only.]

No. 1,457,639. Truck for Handling Brick and Hollow Tile. Merton T. Straight, Adel, Iowa, patentee.

A device for handling hollow tile comprising a frame, having a series of horizontal prongs spaced apart so that each may enter the opening of a correspondingly spaced tile of a series of adjacent and symmetrically arranged tile, means for elevating and lowering said frame, means for swinging said frame in a horizontal plane when in any of its vertical positions of movement, and means for moving said prongs longitudinally into and out of the tile when said prongs are in any of their positions of movement.

No. 1,460,455. Brick Machine. James R. Tackett, Olive Hill, Ky., patentee.

In a brick treating machine, a brick press, a brick repress in spaced relation to each other, a brick support interposed between the pressure on which bricks are transferred from one press to the other, horizontally reciprocating brick pushing elements for engaging bricks and pushing them over the support, vertically and longitudinally reciprocating brick carrying elements in operative relation to the support for lifting the bricks from the support and transferring them longitudinally thereof and re-depositing them thereon, and means of operating the brick pushing elements and brick carrying elements oppositely.

No. 1,446,896. Machine for Cleaning Bricks. Nelson T. Fuller, New Bedford, Mass., patentee.

A brick-cleaning machine consisting of a cutter, including a wheel having radial slots the inner ends of which are undercut, blades fitted in the slots and having their inner ends shaped to engage the said undercut end walls of the slots lugs on the outer ends of the blades; a split ring engaging over the lugs to hold the blades in the slots, and clamping arm on the ring to hold the latter to the wheel.

No. 1,460,287. Tile Press. Francis E. Stevenson, Mount Gilead, Ohio, patentee. Patent assigned to The Hydraulic Press Manufacturing Co., Mount Gilead, Ohio.

A press comprising a fixed lower die, a mold surrounding said die and having its top movable to register with the top of the die, a charging device, means for moving the charging device so that the material carried thereby overlies the die, means for raising the mold and charging device, the means for moving the charging device acting after said movement is completed to withdraw the same leaving the material in the mold, an upper die, and means for moving said upper die to compress the material in the mold.

No. 1,460,188. Baffle-Wall Brick. Alfred H. Willett, West New York, and Harry S. Martin, Ridgewood, N. J., patentees. Patent assigned to American Arch Co., New York, N. Y.

In a boiler fire box having inclined circulation tubes and means therebelow for supporting a cross wall, the combination of bricks adapted to be used in one position in the construction of the body portion of said wall and in another position in the construction of the cap portion, each of said bricks having a recess at each end which leaves a shoulder adapted to engage the under portion of an adjacent tube when the brick is in cap forming position whereby forward displacement of the brick is prevented.

No. 1,457,339. Kiln and Burner Therefor. Edwin M. Bassler, Milwaukee, Wis., patentee.

The combination of a kiln and a burner therefor, said burner comprising a fuel supply pipe, means for creating a current of air therethrough forming a primary air supply, a header, pipes which connect said header with the interior of the kiln and are spaced radially from said fuel supply pipe, and means for supplying air under pressure to said header forming a secondary air supply, said secondary air supply being of relatively low pressure and large volume as compared with the primary air supply, substantially as described.

No. 1,458,198. Tile-Making Machine. Alfred H. Rush, Phoenixville, Pa., patentee.

A tile making machine comprising a former having an open top, said former being adapted to receive material to form said tile, a cutter bar adapted to be reciprocated over said former to remove excess material therefrom, and means for locking said former during the formation of said tile.

No. 1,458,376. Method of Making Ceramic Products. Edward Anderson, Dayton, Ohio, patentee. Patent assigned to A. A. Simonds-Dayton Co., Dayton, Ohio.

The method of making ceramic products, which comprises mixing with the materials that are to compose the finished product a volatilizable substance adapted to bind said materials together and maintain the mass in whatever form it is given until after it is deposited in the kiln.

No. 1,460,764. Stuffing Box for Rotary Driers, Kilns, Etc. Harold Nelison, London, England, patentee.

A gas tight stuffing box for the relatively moving parts of a rotary heating apparatus comprising a multiplicity of resilient packing rings surrounding one of said relatively moving parts and spring controlled members resiliently maintaining one of said resilient packing rings in contact with the other of said relatively movable parts in such manner that said resilient gland rings are capable of rotary movement and longitudinal sliding movement relative to the other of said relatively moving parts.

Trade-marks and Designs Patented.

No. 177,254. U. S. Refractories Co., San Louis Obispo, Calif. Trade-mark registered for bricks.

No. 171,586. Niles Esperson, Mid-Continent Clay Co., Peru, Kans. Trade-mark registered for name "Midco" for building bricks and tile.

No. 169,326. Stevens Bros. & Co., Atlanta, Ga. Trade-mark registered for bricks.

No. 169,209. John W. Newman, Hendersonville, N. C. Trade-mark registered for bricks, building blocks, drain tiles, pipes, etc.

No. 169,465. Stevens Bros. & Co., Atlanta, Ga. Trade-mark registered for fire brick.

No. 169,200. American Refractories Co., Pittsburgh, Pa. Trade-mark registered for refractory bricks and special shapes of clay, tile and brick.

No. 169,201. American Refractories Co., Pittsburgh, Pa. Trade-mark registered for refractory bricks and special shapes of clay, tile and brick.

No. 169,242. Ceramic Products Corp., Old Bridge, N. J. Trade-mark registered for bricks and other construction materials.

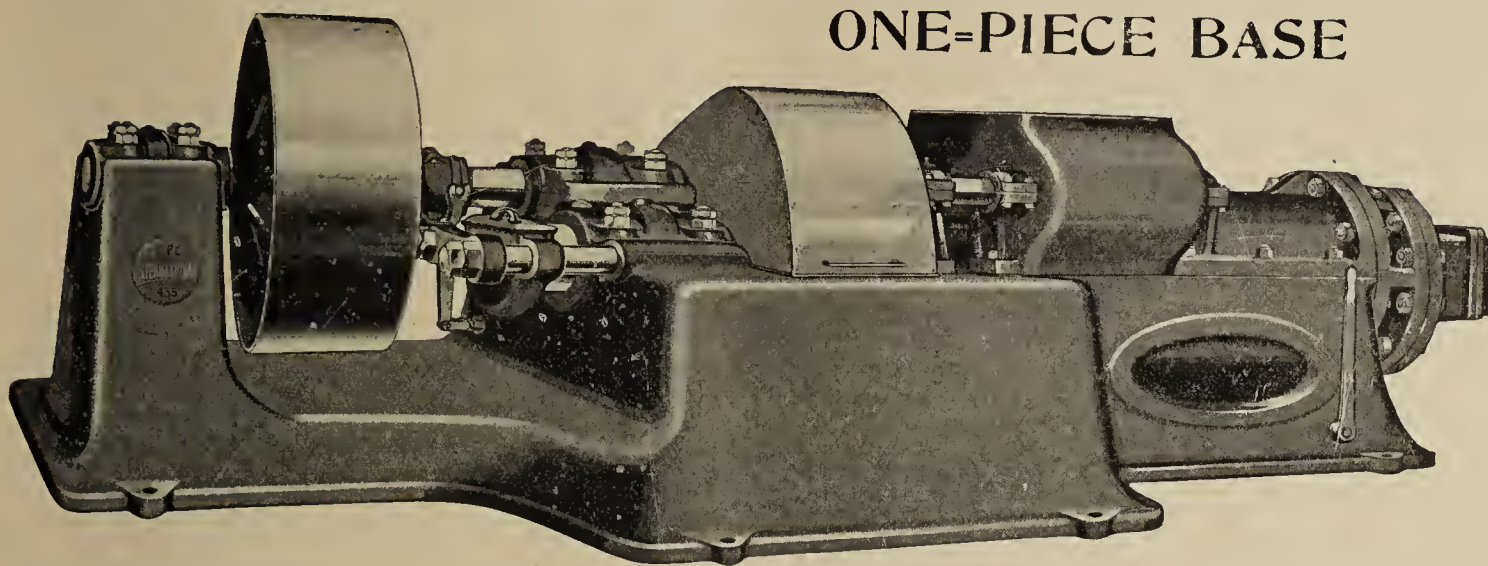
No. 23,653 (re-issue). Joseph Cowen & Co., Blaydon-on-Tyne, England. Trade-mark registered for bricks, tiles, pipes, etc., made of clay.

AUGER MACHINES

PATENTED

425-435-445

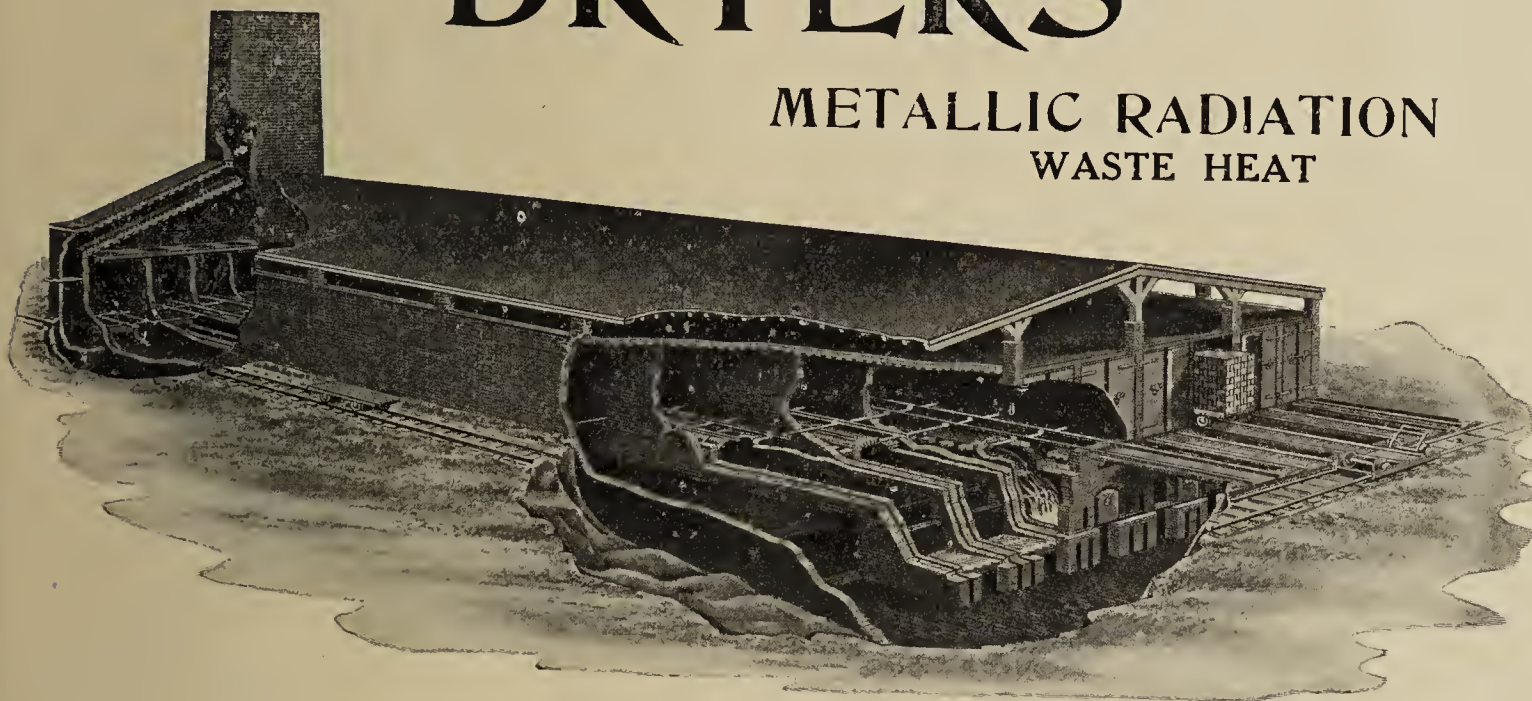
ONE-PIECE BASE



Ask for Bulletin No. 30

DRYERS

METALLIC RADIATION
WASTE HEAT



"More Radiation per foot of Tunnel."

Ask for Bulletin No. 40

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Mention THE CLAY-WORKER

EDITORIAL NOTES AND CLIPPINGS.

(Continued from Page 71)

the middle west. The plant is electrically driven throughout, and has two large Haigh continuous kilns. It is but one unit of the company plants, which has a combined capacity of something like 225,000 brick per day.

The Croswell Brick & Tile Company, Croswell, Mich., has been organized with a capital of \$35,000, to operate a local plant for the manufacture of a line of brick, tile and kindred products. The new company is headed by Frank Matthews, George R. Martin and James J. Galbraith, all of Croswell.

The Farber Fire Brick Company, Farber, Mo., has taken bids on a general contract and will soon make award for the erection of a new plant addition for considerable increase in production. The structure will be one-story brick, and is estimated to cost close to \$100,000, including machinery. A Seelig is company architect.

B. W. Bennett, of Muucie, Indiana, an old time brick manufacturer, called at The Clay-Worker office recently, to report that, together with P. J. Harrah, of Bloomfield, he has purchased a thirty-seven acre tract of land near Tulip, Indiana, on which a modern brick plant will be erected. The company will be operated under the firm name of the Tulip Brick Company, with main office at Bloomfield.

The Merrimac Clay Products Company, Room 1109, 53 State Street, Boston, Mass., has awarded a general contract to the L. H. Shattuck Company, Manchester, N. H., for the erection of a new plant on property acquired some time ago at Plaistow, N. H. The plant will consist of a number of buildings and will be devoted to a line of brick, tile and other burned clay production. It is expected to cost approximately \$250,000, including equipment. It is proposed to break ground at once and have the initial plant units ready for service at the earliest possible date.

Lightning seems to have a grudge against the plant of the Southern Brick Company, Bristol, Va. One death and much damage has been caused in the last few months as a result of the plant being struck on four different occasions. No logical reason has been found to explain why the lightning so frequently selects the place as a target. Not more than two months ago James Deckard, night watchman, was struck and instantly killed by lightning while in the motor room at the plant. Since then firemen have been called there twice when fires were caused by electrical storms. Several months prior to Deckard's death, a bolt crashed through the roof of the plant. No one was injured, however. The motor room has been struck three times.

Certificate of Incorporation was granted June 1, 1923, to William J. Towey, Inc., of Mount Kisco, N. Y., wholesale distributors of common face, and fire brick, hollow and drain tile, sewer pipe, flue linings and clay products in general, with the following officers: William J. Towey, president and secretary; Oscar E. T. Schonfeld, treasurer and general manager. Directors, William J. Towey, Oscar E. T. Schonfeld, Sybil I. Schonfeld, of Mount Kisco, N. Y. They supply exclusively the dealer trade in various counties in New York State and Connecticut, which territory, was covered by Mr. Schonfeld, while with Waldo Bros. of Boston for several years, prior to the establishment of William J. Towey, Inc. They report brick business and have secured several representative face brick orders, a most recent one being the gray manganese brick for the Blessed Sacrament Parochial School, at New Rochelle, N. Y. They invite correspondence from manufacturers desirous of obtaining proper representation in their territory.

The Sebring Pottery Co., Sebring, Ohio, has had plans prepared for a housing development for employees at the plant, to consist of a large number of two-story and basement dwellings, each 24x26 ft., frame construction.

The Eastern Sewer Pipe and Brick Company, of Martinsburg, W. Va., which was recently incorporated for \$350,000 and with F. Vernon Aler as president, will erect the first unit of a sewer pipe and brick plant at a cost of \$243,000, including the equipment. In this connection the officers of the company report that they are in the market for sewer pipe and brick plant clayworking equipment. The building will be fireproof but the date for receiving proposals for the erection of the plant or for equipment has not been decided upon, although the firm reports that it is ready to correspond with concerns furnishing equipment along its needs.

Under the management of S. A. Kammerlohr, who took charge a few months ago, the plant of the LaJunta Clay Products Company, LaJunta, Colo., has been thoroughly overhauled and remodeled, and is now running to full capacity. Mr. Kammerlohr is turning out what he calls a polychrome brick, which is finding favor in that section. Through regulation of the heat in the kilns he gets twenty-seven different colors. At present the company is shipping 100,000 ladle brick to a large iron and fuel company in Pueblo for use in the furnaces and ladles in the steel works. They have recently discovered a bed of clay from which they make a beautiful buff brick.

NEW JERSEY COMPANY PLANS IMPROVEMENTS.

The Oschwald Brick Company contemplates making a number of important improvements in their plant at Cliffwood, N. J., which now has a daily capacity of 70,000 brick. The main office of the company is located at 845 Broad Street, Newark, N. J.

BABSON'S BUSINESS CONFERENCE.

The Tenth Annual Babson's Business Conference is scheduled for two weeks beginning July 30th, at Wellesley Hills, Mass., a suburb of Boston. A large attendance is anticipated. Many of the leading captains of industry will be present. An interesting program has been arranged and can be had for the asking. Address Babson Institute, Wellesley Hills, Mass.

FRENCH BRICK MANUFACTURER WANTS AMERICAN MACHINERY.

D. Reimbert, superintendent of the Brick Factory Espérance, Chauny, Aisne, France, writes he is in the market for some brickmaking machinery and would be pleased to receive catalogues, etc.

SAYRE & FISHER RESUME.

After a strike of several weeks' duration, due to a demand for increased wages and desire to unionize the plant, the Sayre & Fisher Co., has resumed operations at its brick plant at Sayreville, in the Raritan River section, N. J. Labor has been secured from outside sources and while the quota at the present time is still considerably below normal, it is expected to add to the forces right along. Former workers at the plant will be taken back on the company's terms, or a wage advance of 10 per cent, instead of the 15 per cent asked, and an open shop. The call for material is heavy and the company is said to have orders on hand far in excess of current production.

Save \$30,000 on First Cost of Kilns

The average periodical plant of 50,000 brick daily capacity requires at least 15 kilns. The Minter System Plant is producing the same quantity and of a better quality in every case with only 9 kilns.

15 periodical kilns at \$5,000 equals \$75,000

9 Minter System Kilns at \$5,000 equals 45,000

A saving in first cost \$30,000

Save \$14,500 on First Cost of Dryer

Records show that the average periodical plant requires two tunnels to dry as many brick as The Minter System does with one tunnel. The Minter System cuts the first cost of dryer in half, and this on a 50,000 capacity plant would mean a saving in first cost alone of at least \$10,000. With half the number of tunnels required you save half the number of dryer cars needed. The Minter System saves in first cost of dryer cars nearly \$4,500 over other types on plant of 50,000 capacity. Here is a saving of nearly \$14,500 in first cost alone.

Save Nearly \$45,000 on First Cost Alone

By adopting The Minter System of Drying and Burning you save in first cost alone nearly \$45,000, and in addition you get advantage of better quality and maximum of fuel economy, for you use but little more than half the number of kilns and dryer tunnels and can use cheap, inferior fuel

We Can Prove Them

These are broad statements. We back them up. We can prove them to your entire satisfaction.

DON'T BUILD UNTIL YOU INVESTIGATE THE MINTER SYSTEM.

Write for complete details and plants using our system.

THE MINTER SYSTEM

Albany

=

GEORGIA

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Engineering Office

Columbus

Exchange National Bank

210-215 Doctors Bldg.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.

Gladding-McBean Absorb Tropico Potteries.



LADDING, McBEAN & CO., the largest and oldest clay products concern west of Chicago, who have been operating in Northern California for over forty years, have been seeking for some time a foothold in Southern California. This they have finally accomplished by the purchase of the major interest of the Tropico Potteries, Inc., near Los Angeles, for the sum of \$500,000. The principal products of the Tropico plant are architectural terra cotta, vitrified clay sewer pipe, drain pipe and ornamental faience tile. Among the fine work done by the Tropico Company is that of the Bank of Italy in Los Angeles. The American Institute of Architects awarded to the Tropico Company the prize for turning out the highest type of terra cotta in connection with this job. Besides the control of the industrial site, the McBean Company also acquires with the Tropico plant deposits in San Bernardino County and mines in Corona and Elsinore.

Richmond Pressed Brick Company Expands.

The Richmond Pressed Brick Company has announced its plans to double capacity for the ensuing year. They are already in the midst of overhauling preparatory to the installation of new machinery. To facilitate this enlargement, the company has purchased the plant of the John Nicholl Company, including clay beds near Richmond, the product of which will be added to the clay now shipped down from the mountains. The "Richmond Red" brick, a brick with a peculiar color caused by a tincture of iron, will be continued for the coming season, as the red streak is found to continue through the strata in great quantities. The company has also bought forty-six acres of land adjoining the plant to be in readiness for still further development.

Gladding-McBean Picnic.

A delightful success was the picnic put over by the pottery workers of the Gladding, McBean Company at Lincoln. The picnic was held in the auto park grove in Lincoln, and was attended by people for miles around. The program of the day was carried out with great zest and enthusiasm. The terra cotta pressing and plaster mould contest was participated in by a number of contestants. The ball game was warmly contested. The airplane stunts continued all day. And the dancing was enjoyed by the young and some not so young, fine music being furnished by the orchestra from Sacramento. So satisfied are all, that the sentiment is unanimous for an annual repeat.

THE UNITED STATES REFRACTORIES COMPANY.

The United States Refractories Company started something over a year ago by Robert W. Hull and his son, the latter a graduate of the ceramics department of the Boston Massachusetts Tech., which promises to be one of the most permanent industries of California. Besides the little experiment kiln with which they started, they now have in operation a 100,000 brick kiln and in course of construction two 70,000 brick kilns. These are down-draft bee-hive kilns constructed of ordinary brick lined with insulating brick and lined again with fire brick. Their dry-sheds are soon to be transformed into a six tunnel drying room of the latest type, to be heated from the waste heat of the kilns, forced into the tunnels by six foot electric fans. The machinery of the

(Continued on Page 78.)



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay.

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

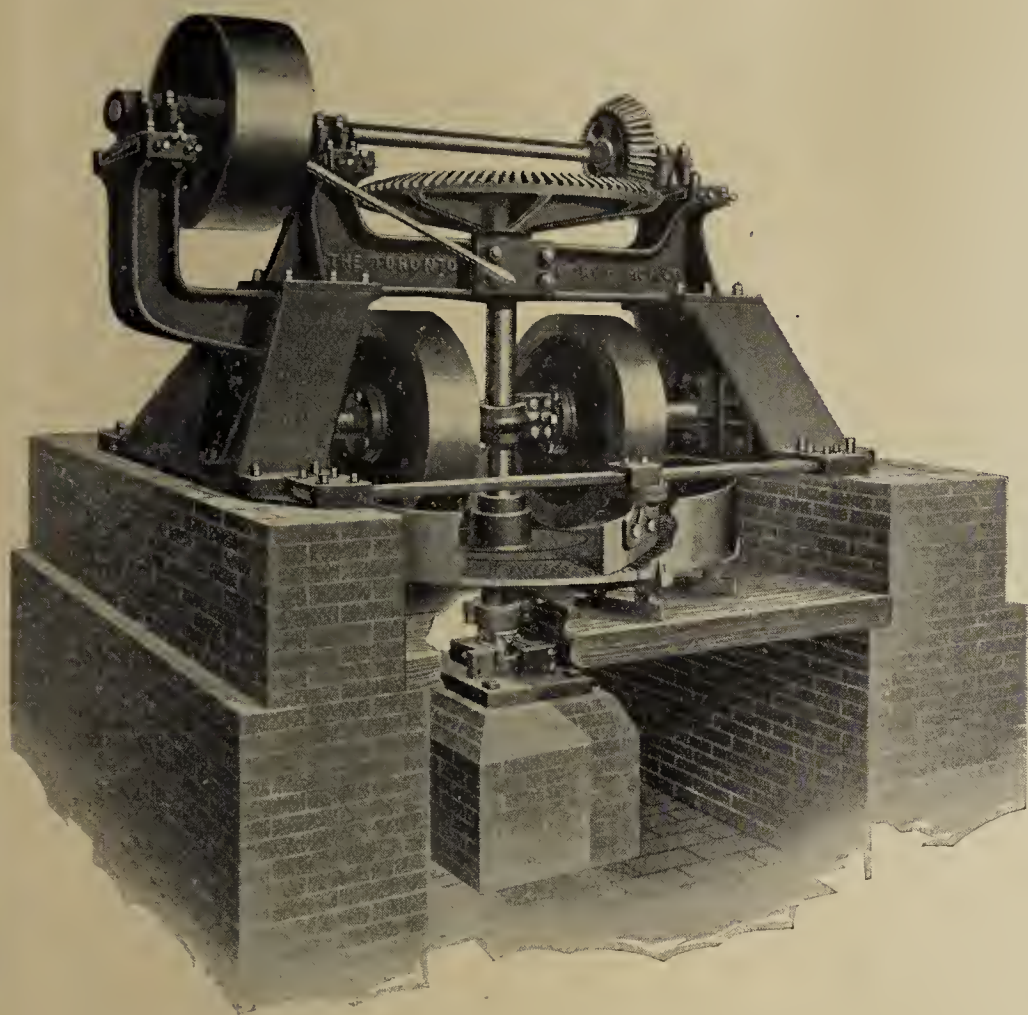
Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

WHY COUNT FIRST COSTS ONLY



TYPE 'B' 10 FT. DRY PAN

When selecting new grinding equipment it will pay you to investigate the comparative cost for repairs. TORONTO pans will save you in the cost of spare parts more than the difference in first cost. This is an item well worth your consideration when installing a new machine.

**INSTALL TORONTO PANS
AND REDUCE MAINTENANCE
COSTS.**

**THE TORONTO
FOUNDRY & MACHINE CO.**

Toronto, Ohio

Mention THE CLAY-WORKER.

plant is run by electric motors, 100-horse-power being required when running full. And two boilers of 80 and 10 horse-power, heated by crude oil, furnish the steam.

The foundation of this industry is a small mountain of diatomaceous clay, of which the Hulls have leased a thousand acres. From this they make a superior quality of fire and insulating brick. This insulating brick is becoming very popular wherever conservation of heat and fuel is an object, so they are shipping east as well as in the west. Reported tests from companies trying them out show 50 to 75% of the fuel bills saved. An interesting instance is that of the quick-silver mine at Parkfield, which roasted 35 tons of ore with one cord of wood.

An interesting part of the product of the company is the manufacture of clay powders. These powders are extensively used in various chemical products. Ten pounds of this powder is used to refine each ton of sugar. All syrup is clarified by filtration through the powder. It is used in the manufacture of yeast. It forms considerable of the substance of toothpaste, silver polish, finger nail polish and similar substances.

New Plant at Anaheim.

W. J. Carmichael, head of the Orange County Brick and Tile Company reports that the machinery is on the ground and is being installed as rapidly as possible. Brick will be making in a few days.

Vitrified Products Corporation.

Lange and Bergstrom, architects, are completing the first unit of the new plant for the Vitrified Products Corporation. The plant under construction is on Dutch Flats, opposite Old Town, San Diego. Operations to be begun some time during July will be at first confined to the production of face brick, building brick, and hollow tile. To these they expect to add as soon as practicable wall tile, vitrified sewer pipe and brick, irrigation pipe, culvert pipe and acid brick, paving brick and decorative fire tile.

The plant will occupy about seventeen acres, and be served by a spur of the Santa Fe which will be run to the plant and the bed from which the clay is taken. The first unit will have a capacity of 50,000 brick daily. The clay holdings include 175 acres of shale, a purified clay, at Linda Vista. This was discovered about five years ago by Geo. W. Kummer, secretary of the company, and a veteran mineralogist. The supply is practically unlimited; and the Krauss research laboratories of New York and the American Clay Machinery Company of Ohio, have pronounced it of very superior quality.

Officers of the company are Victor Kremer, president; George W. Kummer, secretary and general manager; S. C. Hagen, vice-president; Ruf S. Choate, treasurer.
San Francisco, Calif. SUNSET.

STANDARDIZING TILE TYPES AND TERMS.

THE REPORT OF COMMITTEE C-10 on Hollow Building Tile made at the June meeting of the American Society for Testing Materials, by Chairman W. A. Hull shows splendid progress in the matter of clarifying and standardizing terms and types as well as sizes in hollow building tile making specific dispositions of certain terms and standardizing practices as to dimensions. Good should come from this in the way of eliminating confusion among both producers and users in terms and specifications as applied to hollow tile.

Hollow tile and brick are both making some progress in basement and porch work even where frame structures are used and a persistent follow-up here will help some all along the line.



WHAT TO DO When It's Hot COME TO *The Ambassador* Atlantic City Where It's Cool

Guests sleep under blankets every night in July and August. Best bathing beach on Atlantic Coast. Guests dress in hotel and go direct to surf.

The Ambassador
The World's Most Beautiful Resort Hotel—famed for food, service, hospitality

Reservations by wire or letter

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PATENTS & TRADE MARKS

Send sketch or model today for examination and report. **Record of Invention** blank on which to disclose your invention and NEW guide book "**How to Obtain a Patent**" sent free. Promptness assured. Highest references.

WRITE TODAY.

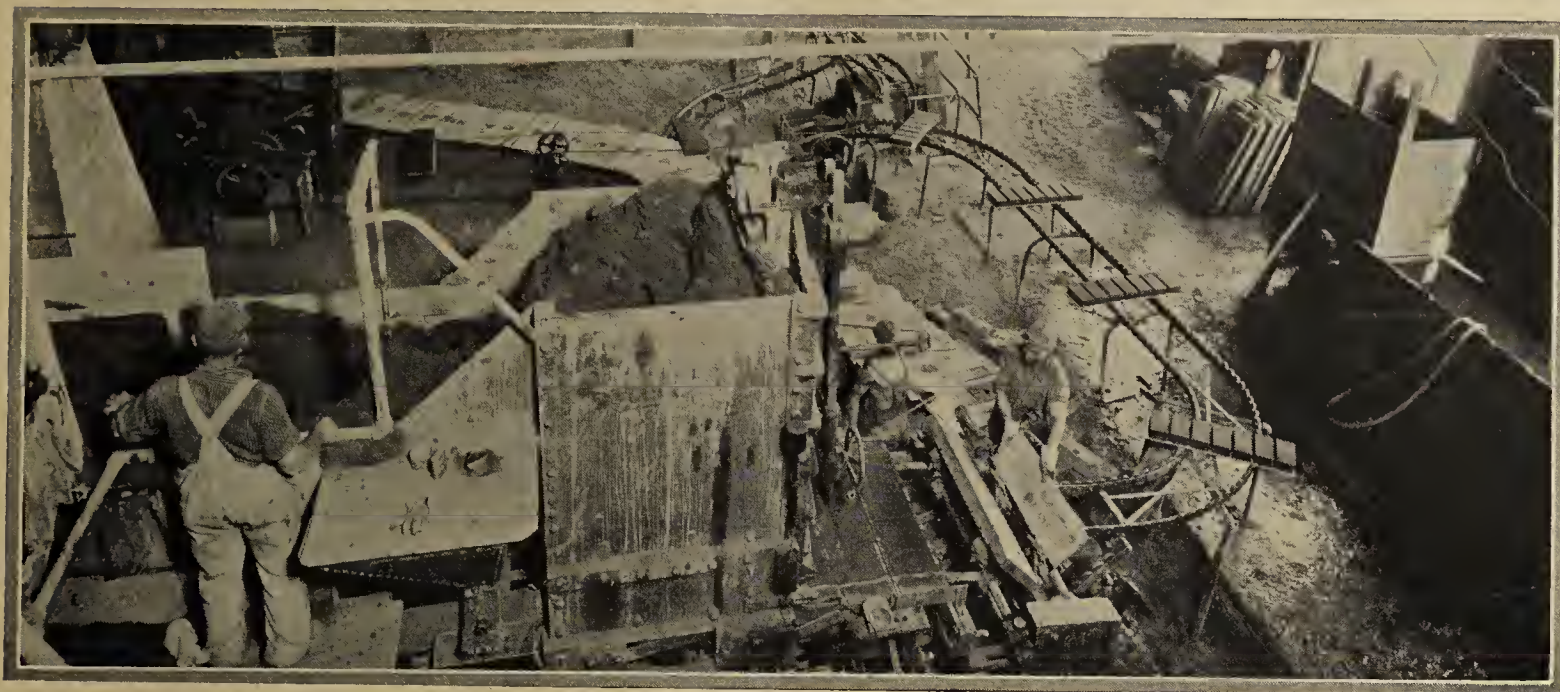
Clarence A. O'Brien

Registered Patent Lawyer

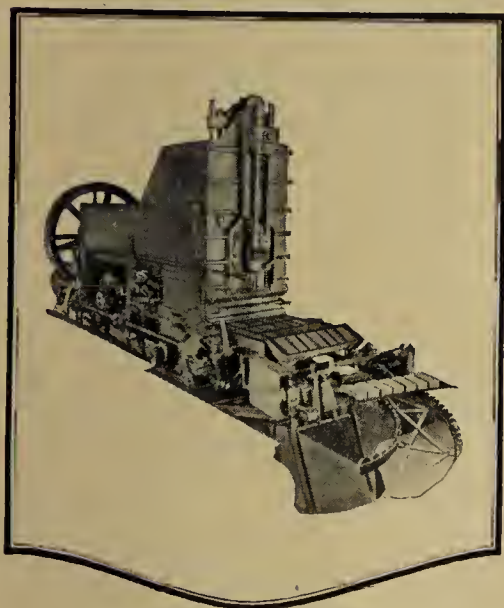
17 Southern Building

Washington, D. C.

AutoBrik Machine



Higher Production Records are Sustained only by Machines that do not Break Down



THE ability of AutoBrik Machines to stand up and withstand the "gaff" of turning out tens of thousands of AutoBrik, hour after hour and month after month, without interrupting breakdowns and shutdowns for repairs, is one of the many outstanding features that appeal to all brick manufacturers.

If there should arise a doubt, just ask any brick manufacturer who owns and operates an AutoBrik Machine. He knows.

New Production Records are being broken every month by AutoBrik Machines.

LANCASTER IRON WORKS, Inc.
LANCASTER, PENNA.

Brick Machinery Department, James P. Martin, Manager
*Specialists in Completely Equipping Building Brick and Fire
Brick Plants for the Manufacture of Brick by the
Soft Mud Process.*

Written for THE CLAY-WORKER.

GEORGIA BRICK NEWS.

EVEN THOUGH BRICK prices have advanced somewhat of late due to increased labor and material costs in the southern territory, there does not appear to have been any material falling off in the volume of business the southern brick manufacturers are enjoying, and a majority of the plants are still operating at near capacity, and in many cases are from 30 to 60 days behind with their orders.

Since the first of the present year there has been a steady increase in the activity at the plants in the South, and also a steady increase in the volume of orders booked each month with the exception of April when they were slightly below the preceding month, though considerably better than in April of last year. Even though orders fell off in April, there was an increase in production at the various plants in an effort to catch up with orders. In May and June, orders increased again, and the outlook now gives every promise that the year 1923, will prove one of the best years that the brick and clay products industries of the South have ever enjoyed. The first six months of the present year have been materially better than the first six months of 1922, and with construction still active over the entire district business is expected to hold up through the remainder of the year.

Export trade in southern made brick going out of the various southern ports has also been very active since the first of the year, with considerable sales to Cuba and various countries of South America, and fairly good sales to other foreign countries. The best demand from export at present, however, so far as the southern plants are concerned, is from Latin-American countries.

Recent increased costs of materials and labor have sent common brick prices up from 50 cents to \$1 per thousand in this section, and face brick prices about \$2 to \$3 per thousand. Other material costs have also advanced, and in some of the larger cities of the district it has had a retarding effect on construction activity. In Atlanta, however, construction still is going on apace, without even the usual summer slack being noted. June permits in the city will be around \$3,000,000, one of the largest months in the history of Atlanta, and May was the largest month of the present year to date. At present Atlanta building has reached nearly \$18,000,000 for the first six months of the year, as compared with a total of \$21,000,000 for the whole year of 1922. And as 1922 was the biggest building year in Atlanta's history it is now certain that this record will be far surpassed in 1923.

Throughout the South there has been more building the first six months of this year than ever before over the same period. A majority of this is brick construction, principally hotels and apartment houses, office buildings and factory buildings, school houses and churches. The result has been an unprecedented demand for brick for the past six or eight months, keeping all the plants in this section of the country going at full capacity.

Another real evidence of good business in the South is noted in the unusually large number of new companies that have been formed in the district so far this year. In the clay products industry, principally brick manufacturing, there were more than 60 such companies organized and incorporated the first five months of this year in the various southern states, probably the largest number at any previous time over the same period. Many of these companies have established new plants, and existing companies are also doing a considerable amount of improvement work.

PRESIDENT OF AMERICAN CERAMIC SOCIETY TAKES UP RESIDENCE IN THE SOUTH.

A. F. Greaves Walker, who has been associated for some time with the American Refractories Company of Pittsburgh, Pa., advises us he is moving to Stevens Pottery, Ga., where he has acquired an interest in Stevens Brothers & Co., manufacturers of sewer pipe and fire brick. Mr. Greaves Walker, in addition to being a director and vice-president of the company, will have charge of all operations. The Stevens Brothers Company made the first sewer pipe and fire brick in the south, having been in business continuously since 1861. This is the first time the office of the president of the American Ceramic Society has ever been located in the Southland.

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ORIGINAL BOSS AIR UNDER PRESSURE APPLICATION
in



DRYING and BURNING

"We had 11 tunnels 120 ft. long, drying with waste heat from 8 round down-draft kilns, and often had to shut down and wait for dry ware. *NOW* we're *drying more brick in 6 tunnels* than we did before in the whole 11. What happened? **WE CHANGED OUR DRYER TO THE BOSS WAY OF DRYING.**"

**It is a question of applying COMMON SENSE
in DRYING as well as BURNING.**

"Under the BOSS SYSTEM we *burn* our brick off a *half* sooner than under our old system, and with a *corresponding saving in fuel*. It gives you immediate combustion, a good clear fire for watersmoking, and you can raise the heat in your kilns just as fast as the material will stand it. The BOSS SYSTEM is inexpensive to install, simple to operate, and *during the 8 years* we have had it, *have not spent one dollar for repairs.*"

IT WILL DO ALL OF THIS FOR YOU==LET US TELL YOU HOW.

INCREASE YOUR CAPACITY. DECREASE YOUR COSTS.



J. C. Boss Engineering Co., Elkhart, Indiana



Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



ALTHOUGH MANY CITIES throughout the country reported a falling off of construction work during the last month, Milwaukee continues to keep her stride in the largest building program in history. While it is reported that a few of the large projects contemplated for this year have fallen through because of the labor shortage and prices in the

building trades, nevertheless, on the whole Milwaukee is running far ahead of most cities in keeping up her building program. During the month of June, the total value of permits issued for construction was \$3,158,340 as compared with \$2,812,172 for the corresponding period last year. For the year to date, 18,333 permits were issued for construction totaling \$19,174,175, against 16,631 permits for \$15,096,988 last year, a gain of \$4,077,187 thus far in 1923.

Of interest to manufacturers of brick as well as jobbers and retailers is the report that substantial reductions in present freight rates on brick are expected to become effective soon in this state. The Wisconsin Clay Manufacturers' Association won its case before the State Railroad Commission last September, when brick rates in inter-line movements were substantially reduced. On eight principal lines of Wisconsin railways the commission ordered cuts ranging from 28 per cent on distances under 25 miles up to about 10 per cent on shipments for longer hauls of from 75 to 150 miles. This basis of rates, however, never was established by the carriers, they having requested a rehearing which was granted by the commission. Such rehearing has not been held and it is understood that a distance tariff schedule will be established in the near future substantially the same as that promulgated by the Commission last fall.

Manitowoc is being considered as the site for a branch plant of one of the large ornamental brick manufacturing concerns, according to H. G. Kress, secretary of the Manitowoc Association of Commerce. The name of the firm has been withheld, but it is stated that the company at present maintains several branch plants in various parts of the country. Another clay products activity in that city is the newly incorporated Northern Clay Products Co., with \$60,000 capital stock, which some time ago acquired the old Leach yards. The Leach Clay Products Co., has filed articles of dissolution, signed by Elbert C. Leach as president and Elmer Leach as secretary. Those interested in the new Northern Company include L. B. Lang, C. M. Kellerman and H. N. Sweet.

The Black Creek Tile Co., of Black Creek, has been incorporated by George J. Richl, F. A. Brandt and A. E. Woody, with \$7,000 authorized capital stock.

A transaction of interest to the clayworking industry and involving one of the oldest brick and tile yards in Wisconsin, has been completed at Jefferson with the sale of the Jefferson Brick & Tile Co., property by Charles F. Stengel to the Kemmeter Brick & Coal Co. Some time ago the Jefferson Brick & Tile Co., was purchased by Mr. Stengel. It had previously been owned by the Fischer and Steel interests, Anton Steele, secretary and treasurer, having been for many years active in the state and being popularly known as the "Grand Old Man" of the Wisconsin Clay Manufacturers Association. The Kemmeter concern was founded by Mike Kemmeter in 1863, and upon his death in 1893, was taken over by his sons. The present corporation formed in 1919, has for its president Gottlieb Kemmeter, with Nick Kemmeter, vice-president, and Alphons Kemmeter, secretary and treasurer. The product of the Kemmeter plants is principally cream colored common brick, although drain tile is also manufactured.

A. BADGER.

CLAY DEPOSITS ALONG

Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

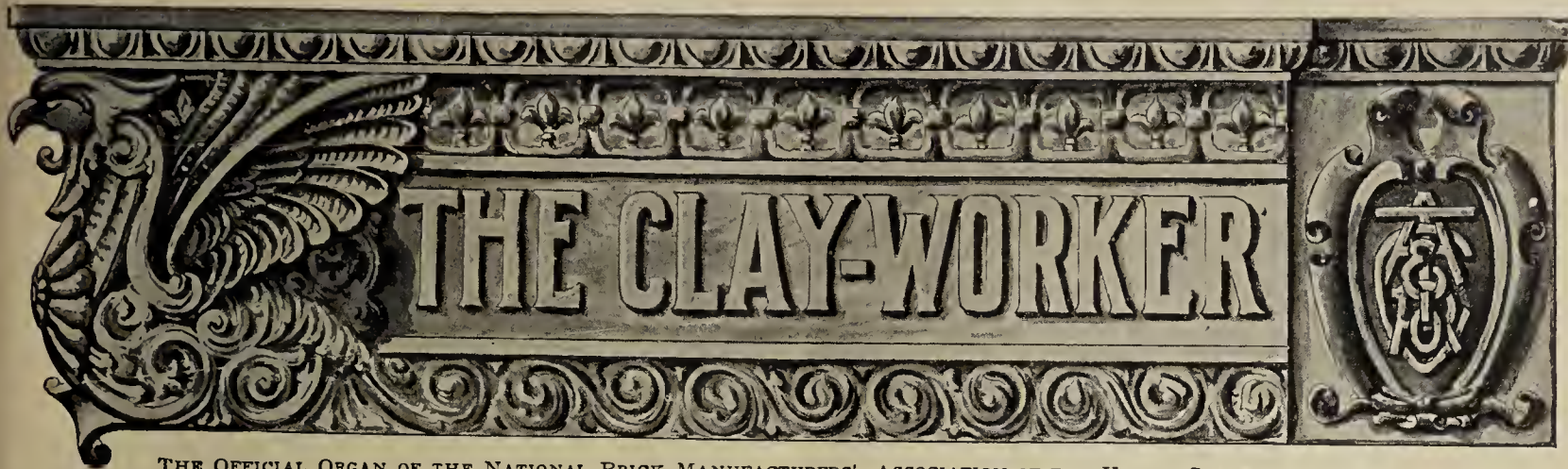
In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

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FRANKLIN, PA.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 80

INDIANAPOLIS, AUGUST, 1923.

No. 2

AN OLD PLANT WITH MODERN EQUIPMENT:

A Kentucky Mountain Building Brick Plant. Its Up-to-date Facilities For Improving Product, Increasing Capacity and Reducing Cost. How an Old Brickmaker with Young Ideas Profits by Using Labor and Time Saving Devices. An Abundance of Good Clay and Skillful Management Insure Continued Success.

"TIME IS MONEY, save time and you save money." This sounds logical and put in actual practice is proving true in many cases. True in some instances seemingly plausible theories do not pan out when put to the test of every-day experiences. The resulting failure is termed an experiment and because experiments are oftentimes costly the practical manufacturer is prone to look askance at the proposed improvements. Fearing they will prove expensive

Virginia and Tennessee join and there we found an interesting brick yard where during the first half of 1923 three million brick were manufactured and the hope is to make this year's product an even six million. This is the yard and plant of the Barbourville Brick Co.

The raw material used so far is surface clay, similar to that found at many points in eastern Kentucky, but which varies a little in different sections. The clay in this case is a



General View of the Plant of the Barbourville (Ky.) Brick Company.

he goes on using out of date equipment following the adage of "Let well enough alone."

It is wasteful to operate in that manner when the adoption of improved methods would result in material economy and consequent saving of labor and time.

Ordinarily one does not look for improved methods and appliances in old plants, but an old plant with new ideas was recently visited in the Southeastern mountain region of Kentucky, at Barbourville, one of the historic towns in that section, near the southeast corner of the state, where Kentucky,

typical yellow clay down to a depth of 8 or 10 feet. Then there is encountered a bluish cast and some change in the nature of the clay. The clay is garnered with a Steele drag-line excavator which performs its work nobly and easily serves the needs of the plant.

The drag-line excavator dumps its clay into dump cars which are snubbed with a mule up to the incline leading into the plant where they are hooked on to the cableway hoist and carried on up. The front end of the plant is provided with storage space so that from time to time reserve stock

can be dumped in storage to provide raw material on rainy days or other occasions when it is not practical to work out in the clay pit.

The clayworking plant is equipped with Steele machinery all the way through. That is brick machinery of J. C. Steele & Sons, Statesville, N. C. The clay first enters a disintegrator, then goes to a pug mill and stiff mud brick machine with a capacity of 50,000 a day. This is a standard type of side cut equipment and at present the producing capacity is in excess of the drying and burning capacity.

It is the drying which sets the pace for the plant capacity. They have a direct heat drying system in which they can dry brick ready for setting in the kiln in 48 hours, and in which they have a present capacity of 30,000 a day.

The kiln part of the plant consists of 8 down-draft kilns 26 feet in diameter, with a capacity of 50,000 brick each. And in 1920 these kilns were equipped with the Underwood Producer Gas Burning Process so that today they are turning out a more uniform product in a shorter time.

Inquiry of Mr. L. L. Richardson, president of the company, as to temperature and time of the burning, develops that here as in other parts of the eastern section of the country the burning temperature is rather high for surface

shortening the time. Where a kiln is left to cool off unaided it takes about 8 days whereas with this fan system they are able to cool off in 5 days and to have better conditions in the kiln for the work of getting out the brick.

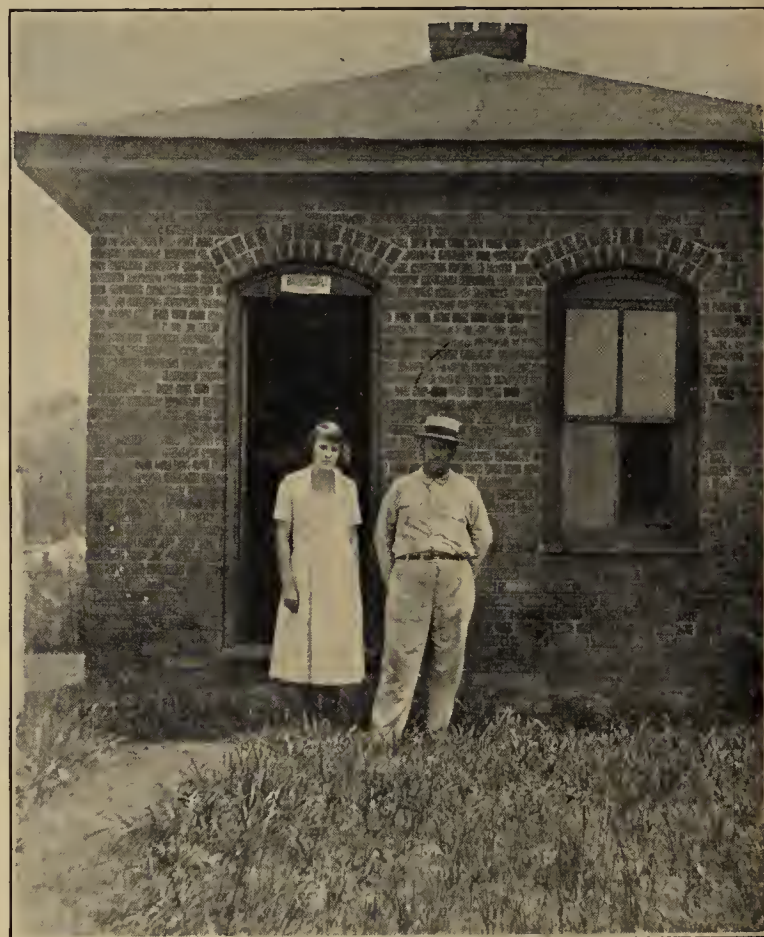
A visit to one of the kilns where this cooler was at work and they were loading out brick showed two pleasing things. One was a good uniform burn of the brick, and the other was comfortable temperature and air conditions for the work of moving the brick.

The brick product is a standard red stiff mud brick, and some good architectural effects have been obtained with selected standard brick. Until recently they have given but



From Clay Bank to Clay Shed, Barbourville (Ky.) Brick Co.

clay brick. The first step in the burning process is to water-smoke for about two days, starting in at zero and attaining a temperature of 1,000 degrees F. at the end of the two days. Then there is another two-day period of heating up in which the temperature is raised from 1,000 to 1,700 after which it is held steady at 1,700 to 1,800. They figure 5 days from the beginning of water-smoking to the finish of the burning, then they start to cool down. Here again they have speeded up the work this year by putting in one of the Manufacturers Equipment Company's Meco Accelerators and Kiln Coolers. It is for cooling that they use it, and it helps considerably by



L. L. Richardson and Daughter Virginia at the Entrance to the Factory Office.

little attention to texture face work, but they are doing some of it now. Some texture brick were being turned out during the writer's visit to the plant but the main part of the product is plain red brick. They have been experimenting some with shale outcroppings which are nearby and readily available to the plant and have found qualities in the shale which is moving them to further experiments with a view to possibly turning to shale as a raw material for making a stronger feature of fancy face brick. Some burned samples of shale showed an excellent color and texture in red brick. And there was another sample of shale that showed up with an odd color suggesting a cross between buff and tan. It is possible that they have here something entirely new and novel in natural coloring. The main center of experimental interest right now, however, is a nearby shale bank that burns a splendid looking red.

The Barbourville Brick Co. started in business in 1905, and has been steadily improved and enlarged. And it was in line with the idea of steady improvement and progress that the Underwood Producer Gas System was installed in 1920. Along with this, too, goes thorough equipment with Brown Pyrometers so as to keep a positive check and control on

burning operations. The result is thorough and uniform and a shortening in the time with economy in fuel. Asked as to the measure of coal per 1,000 brick, Mr. Richardson says he finds that it is hard to get away from the round figuring of a ton of coal to 1,000 brick. They save some one place but it is used somewhere else. Considering the temperature at which they burn they believe they have effected a considerable saving in the fuel for burning, but when they count fuel used in digging, for the power plant, and for the drying they find that at the end of the season it runs fairly close to a ton of coal for 1,000 brick.

Asked as to what he considers the most marked advantages of the gas burning system, Mr. Richardson said that he believed the quicker action attained, that is shortening the burning time was the biggest factor. This at least has been particularly noticeable the present year because they have had an urgent demand that has kept their stocks cleaned



Loading Dump Car With Drag Line Excavator.

down so that a visit to the loading dock showed less than a carload of brick on hand.

They have in addition to the well equipped brick plant splendid facilities for loading out and shipping with a loading shed and dock which has a natural grade level just right for loading into cars. And the present signs of the times are that the building progress in the mountain section of Kentucky is moving along at a rate that will insure plenty of demand to keep this progressive brick concern busily employed.

The personnel of the Barbourville Brick Co. consists of L. L. Richardson, president, and J. I. Mitchell, secretary-treasurer, with Miss Eugenia Richardson helping out with the office work.

The depression in wheat may mean cheaper bread but it also lessens the volume of trade prospects and puts a drag on the prosperity wagon.

SALESMANSHIP AND THE DEALER TRADE.

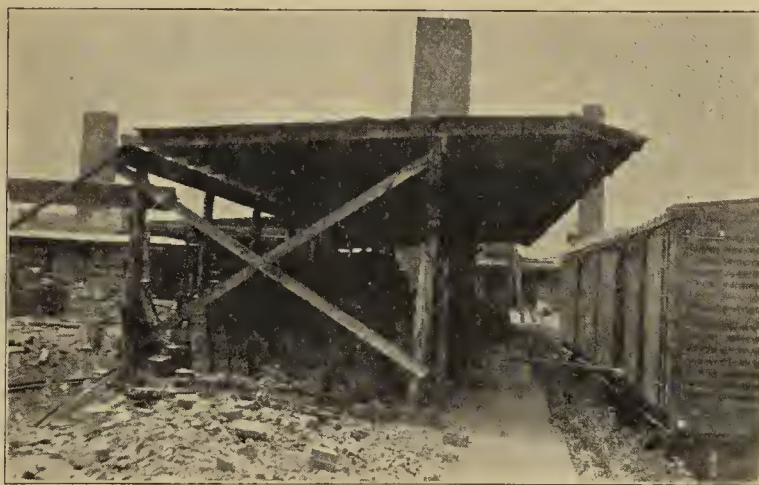
IT HAS NOT ONLY been said heretofore that one need of the clayworking industry is for more salesmanship, but it is just as important for us to look into various angles of this salesmanship thing now and then as it is for us to study and experiment with new ideas and methods in the manufacture of clay products themselves. The product must be sold and the sales field increased from time to time if the industry is to grow and make progress. And right



Excavator at the Clay Bank.

now there are some interesting angles and phases to this matter of selling the product especially in connection with that part of the trade that is handled through dealers.

There are two broad classes of dealers here to take into consideration. One is the dealers in the larger cities and towns who specialize in clay products and other hard building material. The other is that great list of retail dealers, most of them dealers in lumber and similar products, but some of them specializing in hard building material and



Loading Dock and Brick Shed.

building specialties, serving the country from the smaller cities and towns scattered all up and down the land. Their name is legion and they make a broad field of many interesting possibilities. It is this broader field in which clay products are only a few of several lines handled that may well have some special attention now by clay products manufacturers. This does not mean merely brick men and hollow tile men, but another class more particularly in mind are those clayworkers who produce sewer pipe and flue linings.

Generally when a dealer who has heretofore had for his

major item lumber and mill work once gets interested in handling brick jobs it is fairly easy to extend this interest to sewer pipe and flue linings. We might reverse the order and say that once a dealer becomes interested in sewer pipes and flue linings he can be more easily interested in refractory material for fire places and in building brick and hollow tile. So when any one line of clay products gets the favorable attention of a dealer it makes it that much easier by paving the way to other lines. So the clay products people even though they may be making different things are co-operating with each other when they are awakening the interest of dealers in clay products lines.

The hollow building tile people are today pretty well sold on the dealer idea and see great future business extension through getting retail dealers interested in and stocking up on hollow building tile. They have field men doing some splendid sales work in this connection. And this is not only good for the hollow tile people but it is trail blazing in a way for sewer pipe and flue linings.

It is an interesting fact, too, that sewer pipe manufacturers have been making splendid progress in building up the dealer trade in smaller cities and towns during the past few years. They have done so well in their mission work here that sewer pipe in stock is a common sight at most all the towns and small cities throughout the country. Sometimes there has been a little wobbling about in getting the lines established and getting dealers properly interested but this interest is awakening now so that it gives promise of being a big factor in the future in the sewer pipe trade. Unless the signs read wrong the sewer pipe manufacturers will be finding a large share of their trade outlook in the future through the hands of retail dealers in lumber and building material serving the smaller towns and the country district needs.

Another interesting fact produced from observation is that the flue lining producers have not been as aggressively active in selling the dealer trade on their products as the sewer pipe people and the hollow building tile people. It is not easy to understand just why there has been backwardness here, but it is easy to see in the dealer trade a big field of future developments in the flue lining business. And it is one which today seems plainly calling for active salesmanship with a dealer hook up.

The first problem all around, no matter whether it is in pushing building brick, hollow tile, sewer pipe, drain tile or flue linings, is to get in touch with the dealers and get them interested and thoroughly sold on the product and the chances for future business in it in the community. It takes time and costs money to do this. But if it is handled right it will be time and money well spent. Those who feel that the clay products industry has attained its zenith and that trade expansion beyond the present field of activities is nothing more than a pipe dream should wake up and snap out of it. If things go on as they should the whole clay products industry should double in the magnitude of production in the next five or ten years. And a lot of the increased consumption will be found through the channels of the multitude of retail dealers in lumber and building material serving districts which heretofore have not used clay products very extensively. What seems to be needed right now more than anything else is salesmanship of the mission work order. Salesmanship first directed toward the dealers themselves. Then there will come a time when the salesmen covering the territory should go out and help the dealers sell the clay products idea to the individual consumers.

Taking it all together the biggest field for active salesmanship in the clayworking industry today is that field made up of the dealer trade and the opportunities it offers to extend

the stocking and use of a number of items in clay products to the general list of dealers throughout the country. Good work in this field will not only lessen the sharpness of competition in the more congested field of the larger cities but it will open the way to a bigger volume of business in clay products than has ever been dreamed of heretofore.

PRODUCTION OF CLAY IN 1922.

THE OUTPUT OF CLAY mined and sold as clay in the United States in 1922 amounted to 2,647,700 short tons, valued at \$8,330,514, or \$3.15 per ton, according to the Department of the Interior, as determined by figures compiled by the Geological Survey. These figures show an increase of 52 per cent in quantity and 38 per cent in value as compared with those for 1921. The figures represent only clay sold as clay that was burned into clay products by the producers themselves.

The output of kaolin, the clay that is used in making high-grade pottery and porcelain as well as paper and other products, amounted to 275,675 tons, valued at \$2,346,095, an increase of 69 per cent and 49 per cent, respectively, as compared with 1921. The clay of largest production and value is fire clay. The sales of fire clay in 1922 amounted to 1,679,220 tons, valued at \$4,633,486, an increase of 40 and 30 per cent, respectively, as compared with 1921. The output of every kind of clay as classified by the Geological Survey in its statistical report increased in quantity and value in 1922 as compared with 1921 except slip clay, which decreased slightly in quantity, and stoneware clay, which decreased in value.

The imports and exports of clay also increased in 1922 as compared with 1921. The total imports of clay were 350,570 tons, valued at \$3,321,875, an increase of 68 per cent in quantity and value. The imports of kaolin, the chief clay imported, amounted to 310,136 tons, an increase of 90 per cent as compared with 1921.

GOOD FIRE BRICK PUBLICITY.

THROUGH THE CO-OPERATION of the LaCled-Christy Clay Products Company, of St. Louis, with the Bureau of Mines, there is now being carried on some good publicity work in the form of motion picture films entitled "The Story of Fire Clay Refractories." The films follow good publicity channels by showing in details the mining of the raw material by different methods, and following through the process of mixing, molding, laboratory testing, and the actual burning at temperatures ranging up to 2,400 degrees F. Also there are special showings of the application of refractories in various industries which give in pictorial form a sketch of the various uses of refractory materials. In announcing this film, which will be under the control of the Department of the Interior, we are told that it can be obtained by schools, churches and commercial organizations by making application to the Bureau of Mines, Pittsburgh, Pa.

HELP SOME VETERAN.

THE CHAMBER OF COMMERCE of the United States is making an appeal for employers everywhere to insist in the placing of veterans of the late war who have been inspired in some way but have since been trained in vocations for which they seem best fitted. The problem now is to get these trained men located and it is up to every business man to help in any way he can. The way to do your part in this matter is to get in touch with the local Chamber of Commerce or with some veterans' bureau and find out how many men are trained and for what kind of work, then help out by finding employment for those which will fit in with your needs.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

THE HOLLOW TILE SHOWING.

IN THE TABULATED figures of the clayworking industries through the period ranging from 1911 to 1920, inclusive hollow tile makes a splendid showing in the matter of steady and persistent development. Back in 1911 the hollow building tile production of the country as reported to the United States Geological Survey was \$5,660,172. But it grew steadily year by year, the only year showing a loss compared with the previous year being 1918, due to war curtailment. And the result of this persistent mounting of the total year by year is that for 1920 the total value of hollow building tile as shown by the government figures was \$27,112,007. This is a more persistent and larger growth than is shown in any other column of the itemized listing of the clayworking industries, and indicates plainly that hollow building tile is making both rapid and persistent progress as a structural material. It has multiplied its value about five times in a ten year period which is equivalent to doubling the production and value in each two years. When we consider that the normal period for doubling in any staple industry is ten years it adds some emphasis to the fine showing made in the hollow building tile.

LUMBERMEN AND CLAY PRODUCTS.

THERE ARE TWO seemingly contradictory situations in the matter of the lumber folks and their relation to brick, hollow building tile and other clay products used in construction. There is one attitude of competitive antagonism which in its tendencies begets strife and an unfriendly relationship which should not be. There is another and more wholesome trend now showing up in two forms. One is many retail dealers in lumber taking an interest in the handling of clay products in their community as an important item in their trade. The other is in the fact that the lumber people themselves often show their approval of clay products by making use of them in their own business.

A recent example of this is mentioned in the American Clay Magazine of lumber firms commending Dennison Interlocking Tile as the nearest thing to the ideal for dry kiln construction. This is a point that has been made several times in the past few years. And it is coming to be recognized by the saw mills and woodworking industries that either brick or hollow building tile makes a much better material for the construction of dry kilns than lumber. Otherwise they would not be buying this material and bringing it in for this purpose when they have lumber on hand themselves.

An even more interesting endorsement through the use of clay products may be found among the retail dealers in

lumber and among the woodworking institutions which buy lumber for their raw material. There was a reminder of this recently in the rounds by finding a retail concern had built an office building and warehouse in which it took considerable pride because it was built of brick. Other instances are known where lumber dealers take considerable pride in building not only brick offices, but brick warehouses for their lumber millwork. Planing mill and furniture factories erect brick factory buildings as well as brick and hollow tile dry kilns and boiler rooms. Lately in some sections there is a keen interest manifested in building shed side walls of hollow tile, and garages, too, for the lumber delivery trucks of the same material, not only because of its qualities but also because it helps advertise this material by demonstrating its uses and thus contributes to the volume of business which the retailer may do in hollow building tile.

So while there is still an element in the lumber fraternity which seeks to boost frame construction as against brick walls in homes it is the other and more wholesome relationship that is showing real growth and promising to do real good in the future.

As a matter of fact we need both lumber and clay products in home building and in the structural industries generally, and we need and can see the lumber retailers as distributing agencies in their communities. When we consider this carefully it becomes plainly evident that the time is ripe for a somewhat closer walk and better understanding between the clayworking industry and the woodworking industry and especially the dealers in lumber and woodwork for building purposes.

MAKE YOUR TILE GOOD.

IT IS A WELL known fact that a small percentage of inferior or off grade product can give any industry a black eye and a bad standing, and it is more difficult to correct this fault and resell people on an average than it is to sell them in the first place. All this is well enough known to need no elaboration. And the answer is that every manufacturer of hollow building tile should look carefully after the quality of his product and see that it is up to the standards required. Now and then we get reports of poor tile in some city or other causing trouble and making a bad impression for hollow building tile generally. And it begets a feeling of regret that some here and there will get careless or indifferent and spoil the standing of a good product and the progress of the industry through letting inferior stock be produced and put on the market. The first duty is to keep your stock up to standard. If there is unavoidable failure sometime or other, then make local use of the tile where it will fit in and serve a purpose. But do not put it on the

market as a standard tile of quality, because when you do that you not only invite trouble for yourself but you make trouble for the industry as a whole. Every hollow building tile manufacturer should take pride enough in his industry to maintain rigidly the quality of his product that goes out into the markets.

LOADING TILE IN CARS.

THAT IS PERHAPS an all too common error of new men entering into the manufacture and distribution of hollow building tile is in not giving proper attention to loading it in cars for shipment. Loading, it seems from experience and the reports of those who have made a study of the subject, is a matter of some importance because if tile is not properly loaded breakage results, followed by claims from the shippers, and these not only make for trouble and call for adjustment but it gives hollow tile as a building material an undeserved black eye in the minds of buyers and users. And there is an easy way out of this, the way out being careful and proper loading for shipment. If you are not well informed, or even if you think you are informed on this, it will help you if you will write to Secretary J. S. Sleeper of the Hollow Building Tile Association, Conway Bldg., Chicago, and ask him for bulletin matter covering tried and established loading methods. This will help inform you how those who have made a pronounced success of shipping tile with a minimum breakage produced after and during their loading.

WASHINGTON DEVELOPMENTS OF INTEREST TO THE CLAYWORKING INDUSTRY.

THE DEPARTMENT OF COMMERCE here is keeping a close watch on reported developments in the brick clay producing fields of Saskatchewan, Canada, which are said to give every indication of bringing about keen competition with United States clays in the very near future. According to reports received here, there are extensive deposits of clays in Saskatchewan province, which have been found to be of excellent quality and very suitable for the manufacture of brick and tile. Bricks made from the clay are said to have already appeared in small quantities on the Pacific coast, in Washington, Oregon and California. It is understood that should the clays prove satisfactory, brick and tile products made from them will displace millions of dollar's worth of imported goods in the Canadian markets. It is this phase of the matter which is under observation by the Department of Commerce.

In the fiscal year which ended on June 30 there was a substantial increase in our exports of brick and hollow tile, as well as a considerable addition to the number of countries which took these products, according to a report just issued by the Bureau of Foreign and Domestic Commerce. The bureau's figures show that in the fiscal year ended June 30, 1922, we shipped abroad building brick and hollow tile valued at \$208,199, while in the past fiscal year the total was \$357,143; fire clay brick valued at \$1,270,532 were exported in the fiscal year ended June 30, 1922, and in the past fiscal year \$1,670,201; other refractory brick valued at \$210,000 were exported in the previous fiscal year, and in the past year \$273,155.

It is pointed out by the government authorities here that our total exports of brick and clay products for the fiscal year just ended exceed those for any year in our exporting history.

A communication from U. S. Council General Anderson, stationed at Rotterdam, just received by the Department of

Commerce, contains the information that during the month of May, of this year, 2,902 metric tons of building brick were shipped to the United States from that place, this making a total of 20,620 metric tons of brick shipped to the United States since January 1, 1923. Consul Anderson states that this is an entirely new line of exports for Rotterdam. It is understood that the bricks are being shipped to New York under a construction contract, and it is stated that a large quantity are to follow during the remaining months of the year.

The industrial division of the U. S. Census Bureau, in a bulletin just issued, states that the production of fire clay brick in the month of June amounted to 63,861,000 brick as against 48,367,000 bricks a year ago. The new orders received amounted to 46,244,000 bricks as against 57,805,000 bricks ordered in June of last year. A total of 24,640,000 face bricks were produced in June, just passed, as compared with 26,057,000 in May and 28,673,000 in June, 1922. In common and face brick the unfilled orders at the end of June amounted to 54,128,000 bricks as against 57,363,000 bricks on May 31, 1923, and 43,282,000 on June 30, 1922.

Secretary of Commerce Hoover, in the preparation of the extensive 385-page book on "Trade Association Activities," just issued by the Department of Commerce, called upon two well-known members of the brick manufacturing industry for assistance. At Mr. Hoover's request R. D. T. Hallowell, of the American Face Brick Association, co-operated in the preparation of the important chapter of "Simplification and Standardization" of industrial products. In the chapters devoted to "Cost Accounting" and "Credit and Collections," F. W. Donahoe, of the Refractories Manufacturers' Association, gave material assistance in their preparation.

Prices of common brick on June 1 in 38 cities, delivered on the job, were as follows, according to figures compiled by the Department of Commerce.

Pittsburgh	\$18.00	Cleveland	\$16.00
Akron	18.00	Lorain	23.50
Dayton	18.00	Hamilton	25.00
Detroit	17.50	Pontiac	16.00
Bay City	15.00	Waterloo	14.80
Council Bluffs	16.50	Des Moines	19.00
Kansas City	16.50	St. Louis	18.50
Grand Forks	15.00	Sioux Falls	18.00
San Antonio	17.00	Tucson	15.00
Sacramento	17.50	Los Angeles	15.00
Seattle	20.00	Spokane	18.00
Portland, Ore.	20.00	Fitchburg	24.00
Haverhill	26.00	Fall River	27.00
New London	32.00	Poughkeepsie	20.00
Albany	27.00	Schenectady	25.00
Rochester	17.75	Buffalo	23.00
Richmond, Va.	19.00	Baltimore	25.00
Scranton	25.00	Fairmont	26.00
Savannah	17.50	New Orleans	16.50

Prices obtained for hollow tile on June 1 (8x12x12) were as follows:

Pittsburgh	\$0.21	Erie	\$0.19
Akron	.19	Dayton	.21
Hamilton	.20	Detroit	.19
Pontiac	.18	Council Bluffs	.14
Des Moines	.15	Kansas City	.22
San Antonio	.25	Tucson	.18
Los Angeles	.19	Seattle	.25
Poughkeepsie	.22	Albany	.27
Rochester	.21	Buffalo	.22
Scranton	.25	New Orleans	.22

The U. S. Bureau of Standards has just completed an interesting investigation and a series of tests of stresses on hollow tile. The structure selected was the Arlington building in Washington. This building was designed for use as a hotel, but upon completion was purchased by the government and is now occupied by a branch of the Treasury De-

partment. This change of occupancy and purpose considerably increased the live load, which was taken care of by an additional layer of concrete on top of the hollow tile. These floors are constructed of hollow tile and reinforced concrete supported on reinforced concrete beams. The tests are of unusual interest to manufacturers of hollow tile for the reason that they are among the first made on this type of construction and because of the provision above mentioned for carrying the additional load. The test loads, the bureau announces, were designed to produce the maximum positive and negative moments.

The investigation is fully described in "Technologic Paper No. 236" of the Bureau of Standards, which can be obtained from the Superintendent of Documents, Government Printing Office, Washington, at fifteen cents.

James W. Dunn, age 54, one of the most popular and best-known brick men in the District of Columbia, died suddenly in Washington on July 15. For the past twenty-six years Mr. Dunn had been connected with the Virginia Brick Company at their plant at Rosslyn, Va., just across the Potomac River from Washington. He had been general superintendent of the big plant for several years past, in which position he suc-

ceeded his father, who was also widely known in the brick-making industry of this section.

One of the most important brick contracts recently awarded here was for the brick to be used in the big apartment building project at Oak and Center Streets, N. W., in the Mount Pleasant residential section of the city. The contract was given the Hydraulic Press Brick Company, of this city, which company will furnish both "Hytex" and common brick. The contract involves a large amount.

Information received in Washington states that early in the fall a commission appointed by the Cuban government is to leave Havana for the United States to make a thorough investigation of our brick and tile manufacturing plants in the eastern and middle western states, and also to look into the feasibility of securing brickmaking machinery for Cuba. Details of the proposed visit of the commission are not obtainable at this writing, but it is stated on authority of those familiar with the enterprise that it probably has to do with the recent discovery in the eastern part of Cuba (Oriente province) of extensive deposits of fine brick clay, said to be equal to the best clays in the United States. Whether the commission is to secure information for the use of the Cuban government or for private parties cannot be learned at this time.

ALTHOMAR.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Seven. LABOR RECORDS.

LABOR RECORDS HAVE two important functions. The first is to establish the cost of production; the second is to account for labor time and labor wages. The first feature provides the basis for predicting the cost of the work so as to fix price and control over costs and production. The second takes care of the payroll.

Consequently the mechanism that is devised to secure the information as to labor operations and the payroll must have these two functions in view. In addition there are limitations which the nature of clayworking places on these records which would naturally influence and design their planting. Even a very large brick plant must not be over burdened with clerical work. It is advisable, therefore, to consider ways and means that would limit or reduce to a minimum the number of forms that are necessary for the management of a clayworking plant.

Mechanical Time Recorders

For the plant itself it is possible to register automatically the amount of time the men spend at their work by installing a time clock or any other of the mechanical devices now in use. But this method necessitates coming to the office to punch them and since clay plants usually cover a wide area it may mean loss of time to the men and to the plant.

Consequently, a daily or weekly report from the foreman or from the men must be obtained. Where the plant is very small the foreman himself can get this information. The most commonly used method, however, is to provide the mechanic or the worker with time cards and have him fill out on each one the daily work and turn it in for his pay.

The most accurate device for registering the time spent

at the plant is the time clock. By this method each worker is given a number and in the morning on appearing at the job he takes the card from the rack which bears his number and inserts it in the clock which automatically registers the time when he pulled down the lever. Then he places this card in another rack to be taken out when he leaves. The time clock is an excellent device for recording the length of time the man has worked that day, but it does nothing beyond furnishing the payroll with information on which to base a man's pay. It cannot tell the operator how much time is consumed at each operation and consequently the cost of each operation. Another commonly used method is for the foreman to make out a time report covering the entire week, showing the number of men that have worked and the time that each man has put in. This report serves the same purpose as the time clock in that it furnishes the bookkeeper with the basis for making up the payroll. But it is much more inaccurate since the men know the foreman cannot watch them all the time and he is forced to trust to his memory as to whether the men appeared on the job promptly or not. However, the weekly time report can be made to indicate the length of time spent on each production order so that an approximately correct labor cost can be arrived at.

This can be done by making out a report known as the weekly distribution of time. This report has a double purpose. It shows the number of hours of each kind of labor spent on each production order and it also shows the time worked and the amount of pay due to each man for the week. The heading for this report should contain the following items:

1. Distribution of Time. 2. Department. 3. Week Ending. 4. Foreman.

The body should be divided into columns headed:

1. Name. 2. Order Number. 3. Rate. 4. Amount.

The foreman may also report the daily labor on a daily time report showing the names of the men and the length of time each one worked. The form is identical with the above except that provision is made for one day only. However, none of these methods provide for the men who may perform several operations at the close of the day.

One way of avoiding this difficulty is to have every man fill out a job card. The job card reports a separate order on each card. Under this method of reporting time, the worker need not turn in a report unless it marks the end of the production order. Thus, if the men are paid once a week and production orders are issued to cover a week, each worker would turn in one time card for the whole work. If the man works on two productions orders in one week he turns in two time cards. This report falls into three general groups described below.

1. In case a man starts on a production order at the beginning of the week and it takes his entire time for the week, but he completed it at the end, a single report from him will cover his entire work for that period.

2. In case a man works on an order more than a week, he turns in a report for as much of the work as he has done only at the end of the week, so that he can get his pay, and reports the remainder of the work the next week.

3. In case a man finishes a job started the week before, he makes a report when the work is finished and turns in a second card at the end of the week to cover his work on a new order.

In designing the job card for this method of reporting time, it is very important to list all operations that may be performed in the plant so that the man making out the card will have as little clerical work to do as possible. The heading of this report should contain the following information:

1. Time report. 2. Name of the worker. 3. Number. 4. Department. 5. Order number. 6. Date of completion.

The body should contain a column in which is printed the operations performed in the plant and a column for the time a man spends on each one. The bottom of the card should show the total hours which must be multiplied by the rate of the man to get the total wages. It should also contain the signature of the foreman indicating that he has checked the report and found it correct.

Dividing the Week's Work.

In any clay plant manufacturing more than one product, the superintendent can control the labor records by laying out the work for the coming week in advance. The standard rate for completing each order is specified and in paying off the men at the end of the week each man or each gang is given a card which tells him what work must be done for the coming week and the length of time allowed him for doing it. This will be automatically distributed to each class of work by the work order number. An entry must also be made on the payroll sheet to credit the man with the time spent on the order. Then the card is put away in the work order file behind the order number, so that at the end of the month the bookkeeper can cost all orders and will know exactly what labor has been expended on each order.

The Form of the Payroll Sheet.

The above takes care of the individual order. In crediting a man with his time the entry is made on the payroll sheet, specially designed to suit the purposes of the clay-worker. This sheet should contain a column for the number of the man. If a time clock is used, the sheet should show his name and the number of hours of work on each day of

the week. These hours are totaled bi-monthly and in the next column after the Saturday the rate which he is paid per hour is indicated. This when multiplied by the total hours gives the amount of wages due him at the end of the week. The remainder of the sheet is divided into columns showing the distribution of labor. The first column shows the office salary; the second, mining; the third, manufacturing; the fourth, drying; the fifth, baking, and the sixth, the indirect labor. These columns should be totaled and their sum should equal the amount of all salaries and wages paid that week. A separate time book must be kept so that the above information need not carry in the general books. The only entry that need be made in the general book is a single charge to the payroll account and a credit to cash.

The above discussion has gone over all the methods in use for recording the time of labor. However, it is not always advisable for the men to report the time themselves. It is usually unsafe because men object to making reports of any sort and they pay little attention to instructions. If it is possible to employ a timekeeper, the accuracy of the labor record is safeguarded.

Standard Labor Charges.

Of course, this makes no provision for time spent on each operation. In order to fill this need a definite standard for labor time must be set. That is, the time to make a given number of bricks or such other work as is produced in the plant. This standard may be arrived at in two ways. 1. By time studies with a stop watch. 2. Time studies made by special report.

Time studies made by a stop watch are by far the most scientific. As stated before they would be recorded by individual motion and the length of time to each motion would be added to the rest so that the total time for one operation can be determined. A series of these studies would establish definite standards which with the addition of a certain margin as a safety factor are bound to be right. The other set of time studies can be made by special report. Whenever the work runs unusually well and the plant is producing up to its capacity, the foreman can turn in special reports over a given period of time showing the length of each operation. These reports are modified by a margin of safety as in the time studies.

After building up a set of standards for each operation, an order may be automatically charged with the standard time and the standard labor cost for this kind of work, regardless of actual report. The theory behind this method is that any loss in time should be distributed over all the work and no one period made to suffer an accident that is not within its control. It will be found that by charging all orders with the standard rate, no losses from labor will be incurred.

The Budget Cost

This method of costing an order is known as budget costing. Each order is placed on a budget and every effort is made to keep the job within the limit of the budget. But in case the expenses exceed the budget the particular order is not made to pay the penalty, since it in itself is not at fault. The loss is distributed over orders or else it serves as a charge against the reserve that has accumulated from orders that took less than the standard time. This is the only way possible to standardize labor rates in clay plants of any sort. There are so many variable elements to be considered and some whose variations are not anticipated due to inclement weather and other causes that the only way to standardize labor rates in a clayworking plant is to strike a low average and hold on to it until conditions warrant changing it.

Where pay is based on individual time cards, the same

procedure must be followed, that is, the cards must be charged to the payroll sheet and then filed behind their order number or if the card represents an individual order and fixed there with the payroll sheet. If labor is to carry the load for all other expenses incurred, it is very important that accurate records be kept of the direct and indirect labor. The direct labor constitutes the actual productive work done. The indirect labor is made up of those helpers whose time cannot be charged directly to an order or to a department. Time records must also be kept for the executive officers and the clerical work so that labor costs may be properly distributed.

There is one feature of labor time that has not been discussed and that is idle labor on the part of productive workers. Whenever idle time occurs a special report must be made by the foreman of the time lost. Idle time is generally due to faulty planning and should be avoided as much as possible, but where it cannot be helped it must be recorded accurately so that due allowance can be made for idleness in the standard labor rate. The idle time cards must be charged to expense and the reports themselves filed in an expense file where they can be summarized at the end of the month.

(To be Continued.)

COMMERCE DEPARTMENT TELLS HOW ELIMINATION OF 58 SIZES IN PAVING BRICK WAS ACCOMPLISHED—SOME INSIDE DETAILS.

Alfred T. Marks.

DIVISION OF SIMPLIFIED Practice of the Department of Commerce has just issued a statement of much interest giving, for the first time, in detail the circumstances leading up to the elimination of 46 sizes of paving brick which recently was accomplished through the joint efforts of the department and the National Paving Brick Manufacturers' Association.



The department's statement says:

"The wide diversity in style, variety and size, the necessity of reducing the process of manufacture to the lowest possible cost, the compulsion of eliminating every possible waste in the industry, and the determining of the extent of standardization possible, prompted the National Paving Brick Manufacturers' Association to call a conference under the auspices of the Department of Commerce for the standardization of vitrified paving brick.

"A survey of the field as reported to the National Paving Brick Manufacturers' Association by 44 companies, representing 4,245,300 tons of annual capacity, showed repressed lug brick as the predominant variety in 1914. This type constituted more than 72 per cent. of all the product marketed. The use of the type declined steadily and uniformly in proportion to all types until 1920, when the percentage had fallen to less than 25 per cent. Second in importance was wire-cut lug brick, representing about 15 per cent. of total shipments, increasing to 33 per cent. in 1919. During 1920, however, the percentage of such shipments dropped to 22 per cent. Vertical fibre lug brick ranked third in shipments during 1914, equalling about 7 per cent. A slow upward tendency was noticeable in this style of brick between 1915 and 1920, the shipments having reached 13.3 per cent. in the latter year. Plain wire-cut brick, fourth in total shipments in 1914, with a percentage of 6, remained substantially the same until 1917. From 1917 to 1920 a material increase in

the percentage of this type of brick to all brick shipped caused it to be the predominating type, a gain of 34 per cent. being made. 'Special brick' includes, principally, hillside brick made under the Dunn patent, repressed hillside brick, and street railway track brick. In no year has special brick exceeded 3 per cent. of the total shipments.

"The results of the field survey, as noted above, indicated conclusively that two sizes of 10 varieties constituted the major shipments of paving brick during the years 1914 to 1920, and that these two sizes and 10 varieties had grown at the expense of the remaining 56 varieties manufactured. This was conclusive proof that simplification in the paving brick field was not only desirable, but essential.

"The survey report, as prepared by the National Paving Brick Manufacturers' Association, was submitted to the conference of 35 representatives of manufacturers and users of paving brick, and with practically no discussion 46 varieties were eliminated by unanimous ballot of the conference. Considerable debate ensued concerning further eliminations.

"A motion to appoint a committee of five to consider eliminations in the remaining 20 varieties was then adopted. This committee immediately discussed the further elimination of sizes and deemed it desirable, if possible, to reduce the number of sizes, so that all brick could be cut out of two clay columns, one 3 inches high and the other 4 inches high. On further consideration the committee felt that the present demands were such that there should be placed at the disposal of engineers brick to make a wearing surface 3, 3½ or 4 inches in depth. In the smaller cities a 3-inch pavement is wanted, the larger cities requiring a 4-inch brick. The state highway departments, on the other hand, find a 3-inch pavement too shallow for their traffic and a 4-inch pavement deeper than is necessary, and therefore prefer a 3½-inch depth. With these three depths considered imperative the committee found it desirable to eliminate only nine of the varieties over and above those eliminated during the earlier session.

"The report of the committee was adopted without debate. In order to provide for usual variations incident to the manufacture of brick a resolution was adopted allowing a tolerance of one-eighth inch in width and depth and of one-half inch in length.

"The combined efforts of the first conference resulted, in less than six hours, in the elimination of 55 varieties out of 66, permitting a great saving to manufacturer, producer and user."

A subsequent conference succeeded in reducing the 11 varieties to the present number, 7.

A CHARTING OF GEORGIA CLAYS.

AN INTERESTING pamphlet coming to hand deals with the kaolin and refractory clay mines and deposits of Wilkinson County, Ga. This pamphlet has been carefully gotten up with some splendid illustrations of working mines and a thorough listing of properties together with a detailed map showing the location of the different classes of clay deposits. And there is included also table of analyses of the clays described. Those interested can obtain further information from J. M. Mallory, Industrial Agent of the Central of Georgia Railway, Savannah, Ga.

Though the time and place has not yet been set for the N. B. M. A. annual convention, the time is here for those outside the fold to be joining so that they may take a keener interest in the coming convention plans as well as benefit meantime from the membership.

REFRACTORY POSSIBILITIES OF SOME GEORGIA CLAYS.*

By R. T. Stull² and G. A. Bole³.

Introduction.

OF THE DIFFERENT raw materials used in the manufacture of refractories, clay must be relied upon in the future, as in the past, to furnish the bulk of commercial refractories because of its greater abundance, wider distribution, and broader application.

It has been stated⁴ that the best fire clays of Pennsylvania, Maryland, Ohio, and Kentucky, within reach of railroads, are waning rapidly and that the average quality of the fire clay refractories classed as number one has fallen off within the last 15 to 20 years. It must, of course, be recognized that there are fire clay refractories on the market at the present time as good as any made in the past, but the bulk of such, as a class, has evidently decreased in refractoriness from one to as much as three cones.

Several plants have experienced difficulty in finding sufficient available flint clay of good quality to supply their needs, while others have exhausted their number one plastic clay and have been compelled to use bond clays of lower refractory value.

The Ohio Geological Survey in co-operation with the United States Bureau of Mines has completed an investigation of the fire clays of the State.⁴ Of 86 clay samples tested, mostly operating plants, only 16 samples were sufficiently refractory to soften at or above cone 31, thus qualifying as suitable clays for the manufacture of high duty refractories. Twelve of these were flint clays and four were semi-flint. The most refractory ones softened at cone 33 and no bond clays were found in the State of sufficient refractoriness to fall within the high-duty class. The nearest to it were two plastic clays deforming at cone 30½.

It was also found that some plants were bonding their high-grade flint clays with plastic clays deforming at cone 29 down to as low as cone 23. Bleininger and Brown have pointed out that a fire brick under load at furnace temperatures⁵ is no better than its bond.

The broader application of the electric furnace to the metallurgical and chemical industries, the development of new processes, automatic stoker-fired boilers and the broader application of forced draft to furnaces have created a demand for a more serviceable fire brick of higher refractory value. Such a brick can be made from kaolins and highly aluminous clays.

Economic Factors.

Through the middle of Georgia from Northeast to Southwest runs a belt, known as the coastal plain, 220 miles long and from 25 to 50 miles wide, containing secondary kaolins, bauxitic clays and bauxites in abundant quantities.

These clays were derived from the decomposition of crystalline rocks of the Piedmont Plateau to the North and were

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¹ Published by permission of the Director, U. S. Bureau of Mines.

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⁴ "Coal Formation Clays of Ohio," Bulletin, 26, Ohio Geological Survey. (In press.)

⁵ A. V. Bleininger and J. H. Brown, Trans. Amer. Ceram. Soc., 12,341 (1910).

washed down and deposited on the coastal plain where beds were formed from a few feet to over 40 feet in thickness.

Nature evidently conducted a clay-washing process on an enormous and efficient scale, for many of these clays are snow-white, very fine grained and comparatively free from impurities. All are very refractory.

The theory has been advanced that bauxites were derived from the alteration of the kaolins. This is indicated by the fact that deposits occur varying in composition all the way from kaolin on the one hand to bauxite on the other.

Many of the fine white clays are produced for the filler trade and several of the white burning ones are used for pottery making purposes.

The kaolins are plastic and mold readily and many of them show a fairly good dry tensile strength. As the alumina content of the clays increases above the kaolinite ratio, their plasticity and slaking tendency decrease and, with rare exceptions, their iron content increases with the alumina. Kaolins and bauxitic clays, which may not be suitable for fillers or pottery, fuse at a very high temperature and, therefore, are valuable for the manufacture of refractories.

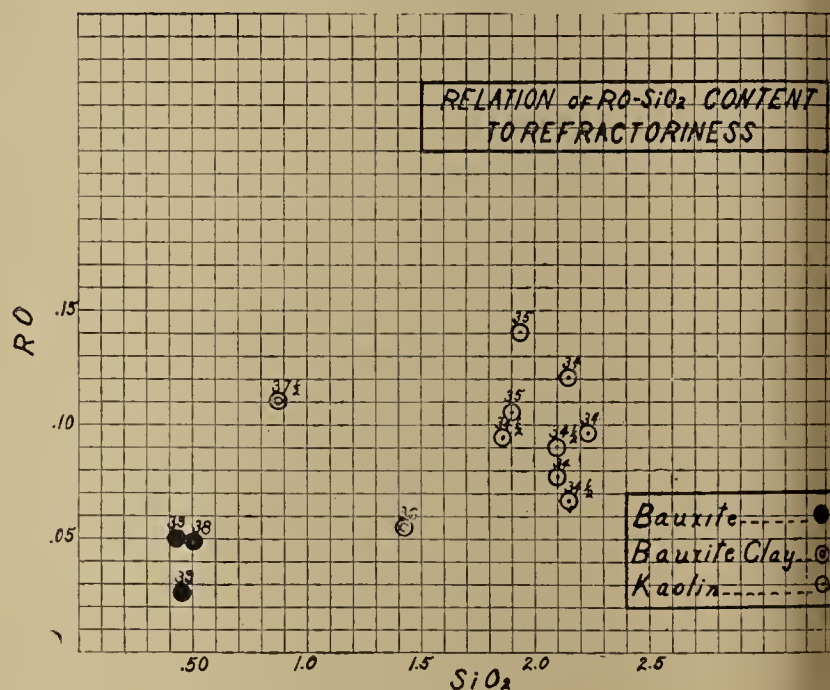


Fig. 1.

Bleininger and Brown¹ point out the advantage of using the same clay for grog and bond, as follows:

"As to fire brick made from a clay material which is sufficiently plastic so as to be used alone, it is clear that its ability to carry loads depends simply upon its composition. Some of the very best tests have been obtained on materials of this kind. * * * Such a clay will stand up or fail by virtue of its own quality. A pure clay of moderate plasticity would be the ideal material for the manufacturing of fire brick."

The Central of Georgia Railway Company entered into a co-operative agreement with the Bureau of Mines to investigate the pottery making, filler, and refractory properties of the kaolins, bauxitic clays, and bauxites along the Railway's right of way.

Thirty samples of from 500 to 2,000 pounds each were selected in a manner to represent the different types in the field. Some of these clays were found to be valuable for pottery making purposes, while others were especially suited to the filler trade. They were all refractory. The deformation temperatures of the clays tried out for use in the cera-

¹ Loc. cit.

mic field varied from cone 33 as the lowest to cone 39 plus for the highest. Of these clays,

- 2 Samples deformed at cones 33 to 34
- 14 Samples deformed at cones 34 to 35
- 3 Samples deformed at cones 35 to 36
- 1 Sample deformed at cones 36 to 37
- 3 Samples deformed at cones 38 to 39
- 1 Sample deformed above cone 30

In the fire brick industry, most of the flint and plastic fire clays are obtained by undergoing mining. Often it is necessary to move considerable inferior clay to obtain the desirable refractory clay. Underground mining is comparatively expensive. Often it is necessary to move a ton of inferior clay to get a ton of number one clay. The clay cost delivered at the plant may vary from one to two dollars per ton and in some cases it amounts to even more.

The kaolins and bauxites of Georgia were essentially surface deposits which have been covered with an overburden that varies from 3 to 10 feet in depth. Several deposits of substantial thickness are covered with comparatively thin overburdens. One deposit in particular is 28 to 40 feet in thickness. It is covered with an overburden that ranges from one foot in thickness along a ravine, up to 14 feet and will average about 8 feet. Such a clay can be mined by stripping,

with 30% kaolin G-3 and the brick fired to cone 16. Results of the tests are shown in Table IV.

TABLE II.

Laboratory Tests on Clays Ground to 150-Mesh

Sample number	Tempering water	Drying volume shrinkage	Drying linear shrinkage	Volume shrinkage cone 11	Linear shrinkage cone 11	Porosity ¹
G-1	41.06	24.83	7.70	40.05	15.68	29.20
G-3	35.76	17.05	5.40	43.41	17.29	40.70
G-5	38.50	22.68	7.10	38.01	14.74	22.82
G-7	35.20	18.71	5.90	41.88	16.55	36.20
G-10	28.60	11.03	3.50	44.77	17.95	27.77
G-11	39.66	20.38	6.40	43.09	17.13	24.30
G-12	29.68	14.49	4.60	47.10	19.12	29.56
G-13	32.80	7.53	2.50	45.15	18.14	27.05
G-14	33.83	12.90	4.10	47.87	19.52	19.46
G-15	38.73	15.83	5.00	37.32	14.42	25.72
G-19	42.40	13.34	4.30	52.17	21.79	55.10
G-20	30.13	11.32	3.70	44.86	18.00	15.93
G-23	38.10	26.66	8.10	32.09	12.09	15.03

Note: The above figures represent per cent figured on basis of dry clay and test pieces.

Samples G-10 to G-14 inclusive are bauxites. The brick made from these materials were friable and of a very weak structure and should be burned considerably above cone 14 in order to give them the mechanical strength to withstand spalling and load.

TABLE I.

Chemical Analyses.

Clay no.	G-1	G-3	G-5	G-7	G-10	G-11	G-12	G-13	G-14	G-15	G-19	G-20
Moisture												
105°C	2.05	1.15	.98	.99	.35	.52	.89	.57	.46	.74	.60	.53
L.O.I.	12.67	13.33	12.73	13.42	24.07	14.13	25.89	21.97	25.41	13.79	13.23	17.17
SiO ₂	45.61	46.56	45.78	43.82	16.09	42.59	14.08	24.80	14.42	43.25	46.56	35.95
Al ₂ O ₃	36.15	35.51	37.01	38.26	55.48	38.04	55.34	47.99	56.23	39.45	36.57	43.32
Fe ₂ O ₃	1.47	1.59	1.11	1.44	1.77	1.59	1.65	1.92	.96	.96	.99	1.35
TiO ₂	.77	1.29	1.32	1.60	2.04	2.34	1.98	1.88	2.34	1.17	1.48	1.60
P ₂ O ₅	.05	.05	.06	.05	.06	.08	.07	.05	.01	.04	.01	.06
CaO	.80	.39	.35	.17	.16	.88	.14	.95	.31	.24	.35	.14
MgO	.30	.25	.18	.10	.08	.12	.06	.21	.12	.11	.24	.11
K ₂ O	.43	.00	.75	.13	.00	.00	.04	.00	.00	.16	.00	.00
Na ₂ O	.00	.00	.03	.29	.00	.00	.06	.00	.00	.38	.00	.12
Sulphur	.02	.03	.06	.02	.02	.05	.05	.03	.06	.15	.01	.03
Cone	34	34	34½	35	38	35	39	37½	39	34½	34½	36

and delivered to the plant at a cost of approximately 20 to 30 cents per ton.

Laboratory Tests.

Of the above mentioned 30 clays, 13 were tested for refractory purposes. The chemical analyses and deformation cone are given in Table I. In Fig. 1 are plotted the RO-Al₂O₃-SiO₂ ratios of the several clays. The iron is figured as FeO. TiO₂, P₂O₅, and S are omitted from the calculations shown in the diagram. These clays seem to owe their high refractoriness in most part to their low RO in general, and in particular to low alkali content. Besides the ordinary laboratory tests to determine the physical properties of these clays, full-sized fire brick were made and tested under load at furnace temperatures, spalling tests were run, and porosity determinations made.

The brick were made from a mixture of 60%, ten-mesh grog, calcined to cone 13, and 40% of the same raw material as bond. The brick were molded dry press and fired to cone 14. Data showing the physical characteristics of the clays are shown in Table II.

The physical characteristics of the brick, made from the several clays and bauxites and burned to cone 14 are shown in Table III.

A second lot of brick was made from bauxites G-10 to 14, inclusive, and tested for spalling and load capacity at furnace temperatures. These brick were made dry press from a mixture of 70% of the bauxite calcined to cone 14 and bonded

They are comparatively low in plasticity, and hence do not mold as readily as a kaolin bonded brick.

TABLE III.

Tests on Dry Press Brick.

Sample no.	Spalling loss (per cent)	Deformation temperature (cone)	Porosity cone 14 (per cent)	Load tests (lbs. per square inch)
G-1	34	28.28	0.50	1830 lbs. without failure, 1330°C
G-3	34	28.78	0.00	1830 lbs. without failure, 1330°C
G-5	34½	33.55	0.17	50 lbs. without failure, 1420°C
G-7	35	27.79	.34	50 lbs. without failure, 1420°C
G-10	38	44.20	13.15	Not tested
G-11	35	39.32	16.95	Not tested
G-12	38+	42.65	22.40	Not tested
G-13	38	43.75	25.15	Not tested
G-14	39+	42.81	18.30	Not tested
G-15	34+	35.83	0.58	50 lbs. without failure, 1420°C
G-19	34+	41.45	14.15	50 lbs. without failure, 1420°C
G-20	35+	36.87	0.52	50 lbs. without failure, 1420°C
G-23	33	35.48	9.25	50 lbs. without failure, 1420°C

Even though bonded with kaolin and fired to cone 16, these brick were not burned hard enough to give them best strength and lowest spalling loss. Their appearance indicated that

¹All porosity determinations were made in the air expansion volumeter, and are, therefore, slightly higher than porosities determined by the saturation method.

they would have been improved if burned at cone 18. However, G-12 and G-13 gave very good results in both the spalling and load tests.

TABLE IV.

Sample number	Porosity (per cent)	Spalling loss (per cent)	Load test (1350°C)
G-10	36.80	5.62	Failed at 691 lbs. per sq in.
G-11	16.05	.....	Cracked in burning. Not tested
G-12	31.60	0.39	Failed at 847 lbs. per sq. in.
G-13	35.40	1.68	Failed at 870 lbs. per sq. in.
G-14	39.20	5.14	Failed at 640 lbs. per sq. in.

Large Scale Tests on G-3

Kaolin G-3 is typical of a number of deposits of the Georgia Coastal Plain. This kaolin was, therefore, selected for the large scale tests. A carload was shipped to a fire brick plant and made into standard sized fire brick by the slush mold-repress process in the regular manner. These brick were made from 60% of the clay calcined (in "dobies") to cone 14 and 40% of the raw clay as bond. The calcined and raw clays were ground together and tempered without screening, according to the regular plant practice. The brick were burned in the kiln in three benches to cones 10, 11, and 14. The total linear shrinkage of the cone 14 brick calculated on the burned length as basis was five and sixty-seven hundredths per cent. Half of this was dry shrinkage and half burning shrinkage.

The average weight of several standard sized kaolin fire

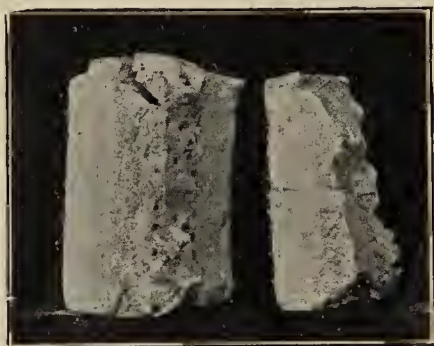


Fig. 2—Brick removed from bung at end of eleven heats; (left)—kaolin, (right)—fire clay.

brick was 6½ pounds, as compared to seven pounds average weight of standard sized fire-clay fire brick. The difference of a half pound in weight per brick, therefore, means a saving of 500 pounds per thousand brick, an item which comparatively reduces freight cost materially. Every ton saved in the refractories for boiler settings in naval craft and ocean-going liners means a ton increase in displacement for ammunition, fuel, or freight.

Spalling and load tests at furnace temperatures were made on brick burned at cone 14 in comparison with a well-known Pennsylvania flint fire-clay brick of excellent qualities. The results of the tests were as follows:

Deformation temperature (cone)	Porosity (percent)	Spalling (percent)	Load at 1350°C
G-3 brick	34	34.0	2.22 Withstood 733 lbs. per sq. in. without failing. (Max. capacity of machine.)
Penna. brick	31	20.8	1.52 Failed at 485 lbs. per sq. inch.

Service Tests.

Malleable Iron Furnace.—A bung of 40 G-3 brick burned at cone 10 was tested in a malleable iron furnace of the Ohio Malleable Iron Company at Columbus, Ohio. The bung was tested in the most severe position in the furnace which is directly above the bridge wall where the fire gases leave the

furnace and start their passage over the hearth and burden of metal to be melted. When operating at one heat per day, the furnace is heated and cooled slowly so that the conditions are not severe on the brick, but when operated at two heats per day, the heating and cooling are done rapidly, thus imposing more severe treatment upon the brick, and their life is thereby materially shortened.

Two brands of brick, one from Pennsylvania and one from Missouri, had been found by the Company to give maximum service. When the furnace was operated at one heat per day, these brick would last for eighteen to nineteen heats, but when the furnace was operated at two heats per day their life averaged only 11 heats.

The G-3 brick withstood 11 heats with the furnace operating at two heats per day. The brick showed no evidence of failure through corrosion, as was the case in the two commercial brands, but they failed through spalling. The brick used showed an average porosity of 32.8% and a spalling loss of 7.98½ as compared to a porosity of 32% and a spalling loss of 2.22% for the brick burned to cone 14. Even though these brick were not burned hard enough to withstand spalling, they gave as good service as the best commercial bung brick the plant has been able to obtain. A bung of 40 brick burned to cone 14 was later tested and lasted through 11 heats. The brick were in much better condition at the end of the test than were the cone 10 brick. The condition of the cone 14 brick, as compared to the Pennsylvania brick at the end of the test, is shown in Fig. 2.

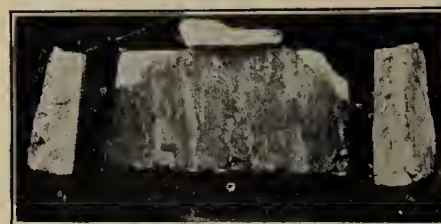


Fig. 3—Kaolin brick removed from electric furnace door at end of 62nd heat.

Electric Furnace Doors.—Tests were made on G-3 fire brick placed in a door of a three-ton Ludlum electric steel melting furnace of the Bonney Floyd Company of Columbus, Ohio. After a long series of experiments on different types and brands of brick, the plant has adopted a silica brick as one giving maximum service.

The furnace is provided with two doors, one at each end. One door was lined with silica brick and the other with G-3 kaolin brick. Brick in these doors, in addition to receiving a high temperature, must withstand the cutting action of slag and metal which is continually thrown against them by the furnace arc.

The silica brick failed after 48 heats as compared to 62 heats served by the G-3 fire brick, an increase of 14 heats or almost 30%. When the two doors were removed, their appearance was substantially the same. Records of tests at the plant show that fire-clay fire brick fail on the average after about 35 heats.

The kaolin brick showed no tendency to spall. Failure was finally due to the fact that the door was corroded at the bottom until too thin for safety.

There was almost no penetration of the slag, as is clearly shown in Fig. 3, which is a photograph of the brick removed from the badly corroded portion of the door.

Electric Furnace Roof.—The third span from the door in the silica brick crown of the Ludlum electric furnace was laid up with the kaolin brick in order to compare their service

as against that of the silica brick. Practice at this plant was to operate a roof for two weeks and to put in a new one over the week end. At the end of the two weeks the brick would often be good enough to last much longer, but since only one furnace was in operation, no chances were taken of having a roof fail during the week. As the roof in which the test was being run was in good shape at the end of two weeks, it was decided to use it for another week in order to make the test more severe.

The entire crown was in fairly good shape at the end of the third week. The kaolin brick were in as good shape as



Fig. 4a—Silica brick removed from roof of electric furnace after three weeks' service.

the silica brick on either side of them. In Figs. 4a and 4b are shown brick removed from the crown at the end of the test. The silica and kaolin brick were side by side in the setting.

It will be noted on the portion broken from brick that there has been less penetration in the case of the kaolin than in the silica.

Ladle Lining.—At the plant of the Bonney-Floyd Company, tests are also in progress to determine the behavior of these brick as ladle linings. Fifteen of the brick were placed in the bottom of an open-hearthed ladle, where difficulty is experienced in getting ordinary fire brick to "hold up" due to

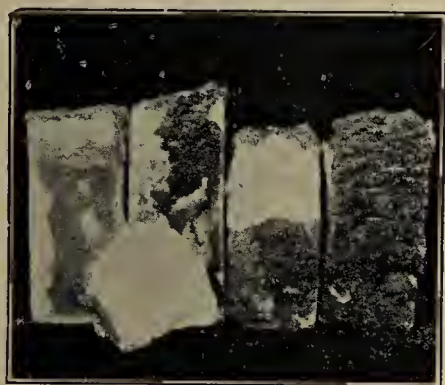


Fig. 4b—Kaolin brick removed from roof of electric furnace after three weeks' service.

the fact that they must withstand heating to the temperature of molten steel and then water cooling between heats. Under this treatment ordinary fire brick fail after two or three weeks through spalling and disintegration. The 15 G-3 fire brick were placed in service January 19, and have shown no signs of spalling or crumbling up to the present time (April 7). They have, therefore, been in service over 11 weeks without showing signs of failing.

Boiler Setting.—Trouble was being experienced in securing proper refractories for the side walls in a stoker-fired fire box at the heating plant at Ohio State University.

Carborundum brick are used along the fuel bed and are giving good service, but due to local heating produced by

the stoker, the fire-clay brick immediately above the fuel bed are dripping badly. One hundred of the kaolin brick burned to cone 14, which were placed in a side wall immediately over the carborundum, are standing up well while a Kentucky fire brick, recommended for the service by a local dealer, has been cut away badly on both sides of the kaolin brick. The test has not been in progress long enough to foresee the final outcome, but it is evident that the kaolin fire brick will outlast the fire-clay brick by a considerable margin.

Oil-Fired Furnaces.

Two hundred of the G-3 brick burned to cone 14 were laid up in a checker baffle in the combustion chamber of an oil fired Wickes vertical tube boiler at a Gary, Indiana plant. The flame was supposed to impinge on a target before coming in contact with the baffle, although at times the flame licked the wall. A temperature of from 2800° to 3000°F was said to obtain at the baffle. The best grades of fire brick had a life of from 48 to 96 hours, depending upon the length of the oil flame. The kaolin brick held up fairly well for about eight days, although they began to pull away from the walls after 48 hours, evidently due to shrinkage. Highly aluminous brick held up somewhat better than the kaolin brick under the same circumstances. The failure in all cases was due to the intense heat and the corrosive action of the oil flame.

The test was not very satisfactory as the failure was so gradual that no end point could be determined. The life of the different refractories tried out varied enormously among themselves, depending on whether the flames actually impinged upon the brick being tested.

Conclusions.

The Georgia sedimentary kaolins, bauxitic clays, and bauxites tested show deformation values from cones 34 to above cone 39; showed superior load carrying capacity and good resistance to spalling.

Enough work has been done to demonstrate the fact that these refractory materials can be made into fire brick in a practical way both by the dry press and slush mold-repress processes.

Furnace tests under actual working conditions have shown that the service rendered by fire brick made from Georgia sedimentary kaolins were at least equal to and in the majority of cases superior to fire clay and silica fire brick.

Inasmuch as the high-grade accessible fire clays are waning, the average quality of the fire brick decreasing, and the demand for better fire brick increasing, it would appear that the future of the fire brick industry lies in the utilization of the sedimentary kaolins, bauxitic clays, and bauxites of the coastal plain. Vast areas are underlaid with deposits of such substantial thickness that there is enough high-grade material to meet the needs of the refractory industry for years to come.

ADVERTISING

A subscriber to a Missouri paper once edited by Mark Twain wrote him stating he had found a spider in his paper and wanted to know if it meant good or bad luck. Mark replied:

"Old Subscriber: Finding a spider in your paper was neither good luck nor bad luck for you. The spider was merely looking over our paper to see which merchant is not advertising, so that he can go to that store, spin his web across the door, and lead a life of undisturbed peace ever afterward."

The hard coal situation is taking on a sort of hard boiled appearance at this writing.

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing the Commissioner of Patents, Washington, D. C., and enclosing 10 cents for each patent wanted. In ordering, give patent number only.]

No. 1,461,159. Machine for Making Bricks, Tiles, and Other Building Materials. George V. Picot, Paris, France, patentee.

In a hollow-block machine, the combination of compression mechanism embodying a pair of vertical guides, a vertically-reciprocating cross-head slidably connected at opposite ends therewith and provided with a vertical core, and a tie-plate connecting the upper ends of the guides and having a slot conforming to the size and shape of the core and disposed directly in line therewith; and a mould carrier disposed between the cross-head and the tie-plate and having a plurality of moulds at top and bottom, said carrier being movable relatively to the cross-head to bring the moulds successively into position directly in line with said core and tie-plate, thereby to enable the core to move into and through the material in the mould thereover and into the slot in the tie-plate during the upward movement of the cross-head, and the tie-plate to close the upper end of that mould at such time.

No. 1,462,593. Hollow Building Tile. Ernst Philipp Berkes, Pfeddersheim, Germany, patentee.

A hollow block or tile free of undercuts triangular in cross section having an extension or beak at one apex edge provided with an open flute, said extension flush with one face and extending beyond the adjacent face the entire length of the tile.

No. 1,462,596. Slate Brick. Emil P. Engebrecht, Chicago, Ill. patentee.

A process of manufacturing bricks and the like consisting in mixing with burned and granulated coal-mine slate a proportionately small amount of unslacked lime, in adding an amount of water sufficient to substantially slack the lime used, in grinding the mixture together until it forms a coherent mass, in pressing the ground mixture into proper shape under a pressure of from two to two and one-half tons per square inch, and in heating the pressed articles for about nine hours in a bath of steam under a pressure of about one hundred and twenty-five pounds.

No. 1,462,614. Machine for Molding Clay Building Blocks. Henry C. Neuberger, New York, N. Y., patentee.

A building block casting machine embodying a platform provided at one end with an abutment, a plurality of face plates and partitions assembled on the platform at one side of the abutment, and spring actuated means for forcing all of the face plates and partitions in the direction of the abutment to clamp them between the abutment and the spring actuated means.

No. 1,463,007. Mold for Making Clay Building Blocks. James G. Davis, Buffalo, N. Y., patentee.

A mold for making building blocks comprising a stationary horizontal bottom plate, a mold bar movable toward and from the upper part of said bottom plate, a fixed inner wall depending from the front edge of said bottom plate, a fixed bottom flange projecting forwardly from the lower edge of said inner wall, an outer wall movable toward and from said inner wall and flange, and two side plates movable toward and from said bottom plate, mold bar, outer and inner walls and said flange.

No. 1,462,991. Building Brick and Process of Making Same. Robert L. Taylor, Midway, Pa., patentee.

The process of making building blocks or the like consisting in first crushing ferro manganese slag to a proper consistency, mixing the mass with water to form an intimately associated plastic mixture, holding unitary portions under pressure, and then subjecting the compressed and molded units to steam and drying them, substantially as set forth.

No. 1,463,156. Arch Brick. Guy Carleton Denney, Hinsdale, Ill., patentee. Patent assigned to American Arch Co., New York, N. Y.

An arch brick member having along one edge an arch brick support engaging surface and having on its opposite edge a cut back portion having an inclined end surface and a projecting portion having an oppositely inclined end surface, the planes of said surface not intersecting within the body of the member and said portions being complementary whereby when a pair of such members are assembled in reversed relation they co-operate to form a brick, said inclined end surfaces being serrated or roughened.

No. 1,463,184. Fire-Brick Arch. Alfred H. Willett, West New York, N. J., patentee. Patent assigned to American Arch Co., New York, N. Y.

A tube supported fire brick arch construction comprising a series of pairs of invertible bricks supported between two tubes, said bricks in each pair being inclined toward and resting against each other and each brick having at the meeting end two oppositely inclined supporting surfaces constructed to permit the bricks to be rested against each other either face upward.

No. 1,463,399. Manufacture of Refractory Products From Dolomite. Charles A. Longbottom and Frederick L. Duffield, Brassington, England, patentees.

The herein-described process for the manufacture of refractory products from dolomite which consists in artificially mixing binding materials with the raw dolomite, shaping the products from the mixture, subjecting them to an intense shrinking heat, and finally dipping them in a medium having sealing properties.

No. 1,463,697. Channel Brick. Arthur Hardoncourt, New York, N. Y., patentee.

A channel brick having two substantially parallel channels which are relatively deep and leave only webs between the bottom of the channels and the bottom of the channel brick, corrugations on the channel brick at the inner sides of the channels, the channel brick at the outer sides of the channel being curved downwardly and inwardly to the inner sides of the channels so that the channel brick at the channels will be strong and the channels at their upper portions will be relatively narrow while sufficient to permit a mason to introduce his fingers while partially closed into one of the channels without striking his knuckles against the outer walls of the channels, the channel brick having load-bearing portions between and at the outer sides of the channels.

No. 1,462,194. Drying Kiln. Clifford A. Cutler, Buffalo, N. Y., patentee.

A drying kiln comprising non-porous kiln walls, and porous de-humidifiers, located in spaced relation with the kiln walls.

TRADE-MARKS AND DESIGNS PATENTED.

No. 170,216. Pyro Clay Products Co., Oak Hill, Ohio. Trade-mark registered for fire brick and refractory materials.

No. 170,416. The Vitrefax Co., Inc., Los Angeles, Cal. Trade-mark registered for name "Durox" for refractory bricks, refractory linings for furnaces, kilns, etc.

No. 158,967. American Arch Co., New York, N. Y. Trade-mark registered for name "Arch Lock" for fire and other brick.

No. 175,354. The Hunter Dry Kiln Co., Indianapolis, Ind. Trade-mark registered for phrase "Drying From the Inside Out" for dry kilns.

THE PASSING OF PRESIDENT HARDING.

An Honorary Member of the N. B. M. A., Having Been Elected at the Indianapolis Convention, 1922.

THE NATION MOURNS: Its Chief Executive with little warning, was stricken fatally on the evening of August 2nd, and the message which flashed the sad news to the world was a shock to every American at home or abroad. The nation grieves, for Warren Gamaliel Harding had won a warm place in the hearts of the people. To all who knew him personally the President's death is felt as an individual loss, for to know him was to love him.

By nature President Harding was a most kindly man, ever thoughtful and considerate of his fellows. His unselfish, generous nature drew to him the sincere affection of all who came under the spell of his gracious personality. Very few men in public life combine the charm of sincerity and affability as did he. He was a real man with a deep, un-failing interest in the welfare of all fellow mortals. When appealed to on behalf of the National Brick Manufacturers' Association and invited to be present at the Annual Convention held in Indianapolis in 1922 he evinced a lively interest in the Association and its work, and explained that it appealed to him strongly for the reason that as a boy he had worked on a brick yard. Being unable to accept the invitation to be present at the Convention he wired his regrets and extended most cordial greetings and good wishes. It was natural, under the circumstances, he was elected an Honorary Member of the Association. In his death we suffer a great loss. Those of

us living today will never see his like again. Other leaders may challenge our admiration, may command our confidence and esteem, but none can win the real affection felt for Warren G. Harding. Surely when the Angel completes the Scroll of Honor we will find at the head of the list the name of Warren G. Harding for, like Abou-Ben-Adhem, he loved and served his fellow man unselfishly. With a keen mind, a great heart, and an abiding faith in mankind he served with

the best of his ability and with perfect fidelity. The Nation mourns and will ever cherish the memory of his wonderful kindness.

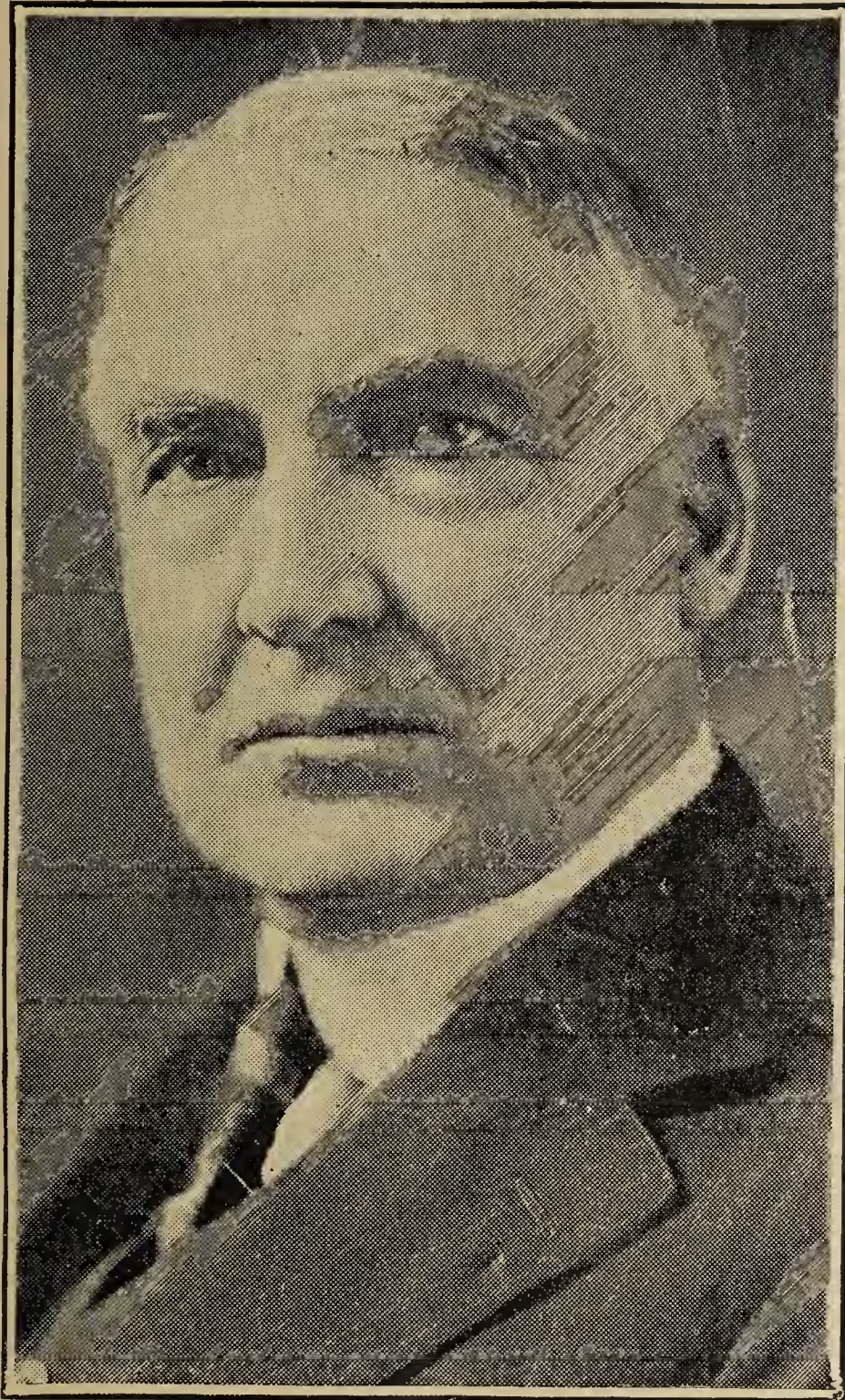
When a Big Man Passes.

When a big man passes to his final reward, and we pause in respect and to review his good work, it is his fine points of character and efforts that come to mind, while his faults and shortcomings are forgotten and left unspoken. Why not have more of this attitude toward our big men while they are alive? Think how much it would have helped and cheered President Harding if, while he was alive and active in his good work for the country, those differing from him politically had left aside fault-finding and praisefully helped him in his good work?

Why not let us take this thought with us in our daily life and relation with other big men who are active today in business and in public work? It will mean better feeling and more rapid progress, and will serve a much better purpose all around than to wait till the Grim Reaper calls them before extending the

deference and praise that is their due.

Another impressive thing we get from the passing of big men is that even the greatest of them can be spared and the country goes forward with only a halt to honor and respect.



Warren Gamaliel Harding—Twenty-ninth President of the United States.

There is no panic, no fear of political chaos, no let up of industry, but a persistent going forward that speaks volumes for the bigness and stability of the country. So let us get from this a stronger spirit of faith and patriotism as well as a reminder that if we will give more accord and recognition to our great men while they are with us there will be less to grieve about when they pass on.

THE BUSINESS TREND.

THE MANUFACTURERS and producers of the country at large, were told on nearly every stated occasion during the fore part of the year (the convention season) by the statisticians, the traveling advice givers, that the first six months of 1923 would be good, for business was on the crest of the wave, but that the ebb tide would set in the last half of the year and there was sure to be a slump and general business depression. This gospel was preached at nearly every convention of manufacturers and the whole country was given to believe that the last six months of 1923 and the presidential year would be less prosperous. So, many have been on the anxious seat and naturally tightened up to some extent in money matters. But how has it really planned out and what can we expect of the future?

There have been some failures 'tis true (business failures decreased in July, the total number being the smallest of any month since November, 1920) but aside from a few brokerage firm failures and minor disturbances together with the talk of lack of buying power of the farmer due to low crop prices, the business of the country as a whole is stable and on a firm foundation.

The sudden death of our beloved President naturally started some talk on the effects the change in the administration would have upon business in general. The comments of the press of the country as a whole and statements of leaders in financial circles are in unity in the belief that while "the ship of state has lost an excellent captain, it sails forward serenely under the able command of another." The New York Times states editorially "That the calm and quiet way in which the new President has set about the discharge of his official duties is precisely what the country would have desired to see in a man assuming the Presidency under such tragic circumstances and is full of good augury for the administration upon which President Coolidge is now setting out with the best wishes and bright hopes of all Americans."

The fact that Mr. Coolidge as Vice President attended all Cabinet Meetings, was in close touch and harmony with the deliberations of that capable body of men and has the inside knowledge of all the administration's plans and purposes, together with his experiences and valuable services rendered in official capacities in the past, should give the country absolute confidence in the sane and sure course in which he will steer the ship of state.

So we need not consider that there is any real cause for any question of uncertainty to business progress from this source.

What Are the Real Facts About Business in General?

Studying the statements from the best of authorities expressed through such well recognized papers as the New York Times, Wall Street Journal, System, Nation's Business, The Constructor, etc., we find that:—

There are well founded indications that the fall volume of railroad business will exceed that of any previous year and it is pleasing to note that the credit and transportation facilities are in excellent condition. The banks can furnish ample credit for all legitimate requirements and railroad officials declare that the expected large freight movement will be handled with only moderate car shortage. And this is taking into consideration the peak of the crop and coal movement. The railroads have been making a tremendous effort to add to and build up their equipment during the past year and are

now in good shape to handle a great volume of business. On July 22nd there were approximately 80,000 surplus cars immediately available even in the face of the fact that the freight loadings in the week ending July 21st, totaled over a million cars, breaking all previous records. The class 1 railroads will add 30,000 freight cars and 550 new locomotives during this month and September based on present delivery rate.

No indication of serious dullness in manufacturing has appeared although there are some seasonal reductions as was expected.

TODAY THERE IS A SHORTAGE OF LABOR WHILE OVER A YEAR AND A HALF AGO NEARLY 6,000,000 MEN WERE OUT OF WORK. WHEN THOUSANDS OF MEN ARE OUT OF EMPLOYMENT AND WAGES ARE LOW WE HAVE A BUSINESS DEPRESSION, BUT TODAY WE HAVE NO UNEMPLOYMENT AND WAGES ARE HIGH IN ALL LINES, SO THAT WE CAN SAFELY SAY BUSINESS IN GENERAL IS GOOD AND PROSPERITY WILL BE PROLONGED WITH NO UNDUE DEPRESSION OR HYSTERICAL TRADE ACTIVITY IN SIGHT.

In basic industries such as iron and steel, orders on books are sufficient to keep plants going throughout the year. The reduction of the 12-hour shift to 8-hour will mean that fully 60,000 additional workers will be needed in the steel business.

The New York Times says: "There is no let up in the demand for steel and the pressure is as heavy as four or five weeks ago, chiefly against old orders and contracts. The buying while light but unseasonably early is regarded as harbinger of a busy autumn in the steel and iron trade."

The automobile trade as a whole is prosperous. Reports from various organization heads, acknowledged leaders in their fields, point out satisfactory conditions in the various trades. The merchandising business of the country is satisfactory in nearly every line and the volume exceeds last year's, while retail sales continue 10 to 15% in excess of last year. Clothing and shoe manufacturers are extremely busy. The leading mail order houses, Sears Roebuck & Co., and Montgomery Ward & Co., according to the Wall Street Journal, have during the first seven months of this year aggregated 36.2% increase over last year and 36.8% in excess of the 1921 business for the same period.

The fact that the mail order business should keep up principally through the agricultural regions in the face of reports of depression among farmers indicates that the farmers are not in the financial straits pictured by the calamity howlers. Of course, the price of wheat is low and the purchasing power is not the same as in pre-war days but the farmers are giving more attention to luxuries than in the past. Nearly every farmer has an automobile and they are in turn hindered by shortage of labor due to the call for men off the farm from factories giving the farmers these luxuries. The agricultural trade needs to confine itself to a more thorough investigation of itself and not lean on all other trades due to the past acknowledgement that all prosperity is based back to the farm. The farmers have no more right to expect a regulation of price on grain through governmental action than the fishman, cotton producer, tile manufacturer, copper producers, etc. The copper producers were in hard straits a few years ago but they are doing splendidly now, not through outside help but because they increased efficiency and lowered costs. If the farmer cannot make a profit on present wheat price he must show lower costs. The average farmer can produce twice or thrice as much crop per acre if he would only under-drain his soil and use the farm he has under his farm. It is safe to say that not 10% of the farm lands are underdrained. There is a moral to be shown here. Mr. Tile Manufacturer get busy.

The industrial prosperity of the United States depends really upon the amount of construction work going on and in view of this fact banking institutions which are seeking an idea as to what the future will bring by way of new business are carefully studying the building situation. A some-

(Continued on Page 182.)

Written for THE CLAY-WORKER.

SETTLEMENT GAUGING OF BURNING BRICK AND CLAY PRODUCTS.

THE GAUGING, or measuring of shrinkage settlement in brick and various hard-burned clay products, during the burning is no new or novel feature of clay plant practice. On the contrary, this aid to burning control is of widely known facility and long practice.

Adherents of the system are legion, and conversion to the gauging idea, usually the prompting of sheer necessity for

surer gauge at present available than the actual, vertical settlement of the kiln charge.

An advocate of the gauging principle, B. J. Gallagher, in his management of important plants throughout the country, like many others realized the crudity and inaccuracy of gauging means hitherto employed for the purpose.

The outfit usually consists of an iron rod, more or less inaccurately scored or marked to scale—a gauging slab of fire clay placed upon the top course of the ware in the kiln—this might be level, but most likely not—an equally uncertain perforated closure slab on top of the kiln crown.

In practice the operator found it quite difficult or impossible to drop the rod perpendicularly through the aperture to the center of the gauge slab below on each operation for comparative measure—also, the variable temperature of the metal gauge rod, with its heavy co-efficient of expansion—tended towards further inaccuracy of the reading, and the practice of long intermittency between measurements, all combined to detract from the benefits possible by the gauging principle in correct practice.

The fact that clay manufacturers have really benefitted by this system, even in its crude and inaccurate practice, accentuates the main fact that the gauging system is of proven facility and doubtless here to stay.

Imbued with this conviction Mr. Gallagher set himself to the task of inventing mechanical means that would supplant the hand labor of kiln gauging and at the same time remedy all the discrepancies of the hand method. It soon became apparent that indication of the settle-movement would be incomplete unless it exhibited to the operator in a visibly moving manner the actual movement going on in the kiln at all times during the burning.

As this settlement is of necessity very slow, a magnification of over five hundred to one became imperative, in order that the kiln operator could at any time, by glancing at the indicator for a few seconds, observe the settle movement exhibited by the micro-hand, which travels visibly like the second hand of a watch.

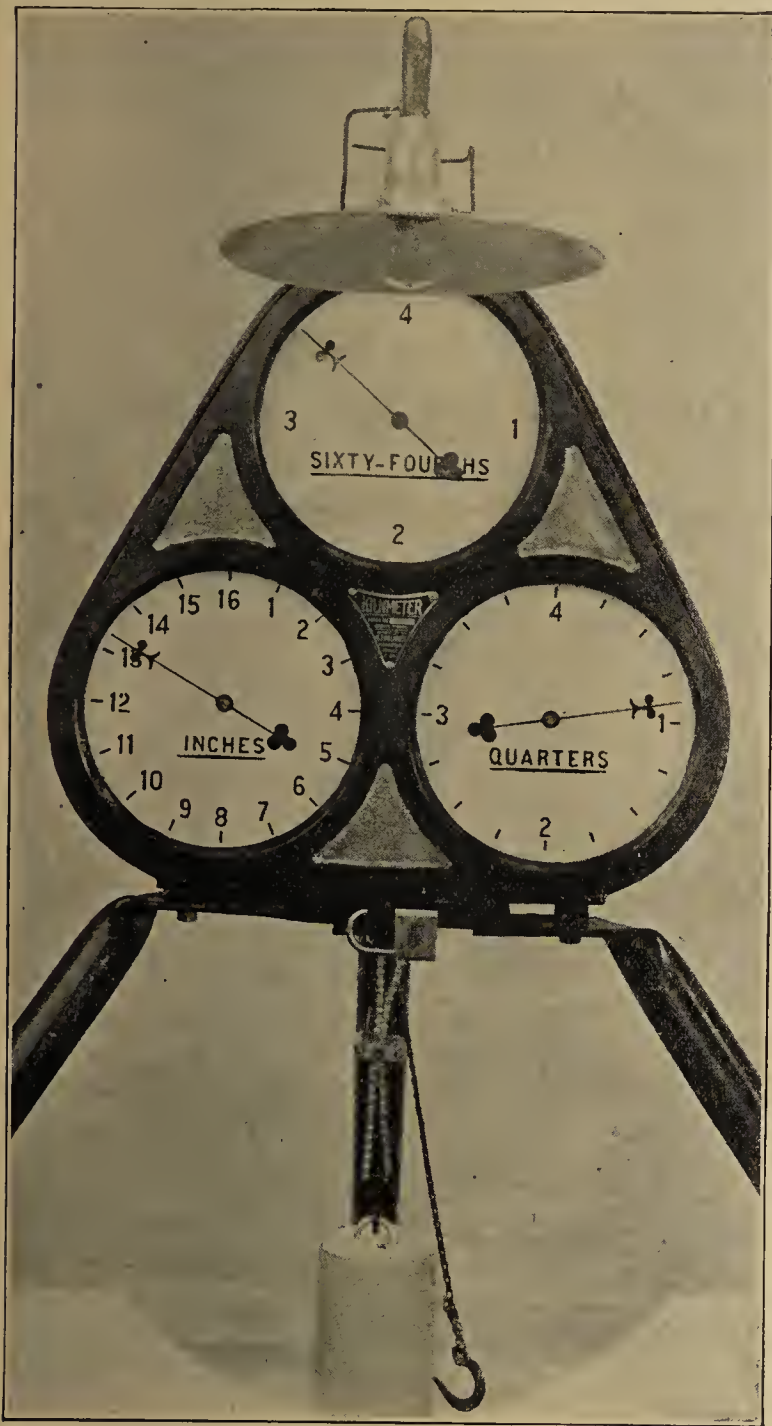
This feature alone, in actual practice, has opened up marked possibilities in closely observing the exact performance of each firing of the kiln, where formerly the kiln fireman was more or less "in the dark" as to actual results being attained between gaugings.

To illustrate—Kilns at one plant are fired on one hour term, at the end of thirty-five minutes after firing, settlement stops, and the kiln remains stationary until the next firing time arrives. There is then still no movement in the kiln until five minutes have elapsed following the firing.

Record shows thirty minutes of actual settling and thirty minutes of inactivity in each hour of firing term likewise all indications of an actual lowering of the temperature in the kiln, requiring additional and unnecessary fuel in making up the retrogression to resume active settlement conditions in the kiln, to say nothing of time and labor lost.

Another illustration—the gauger climbs upon the hot kiln crown, drops his gauge rod and notes the measurement. Upon descending to the ground he ascertains by comparing his gauge with the last previous measurement that nothing has been gained during the intervening two hours of gauging term. Time and fuel have most surely been wasted and certainly no improvement will be shown in the quality of the finished ware.

Still another instance—The gauger goes to the inconvenience and trouble of taking the gauge as before, only to find by comparison that the kiln charge has dropped double or treble the scheduled quota and safe limitation for the gauge term,



The Kilnmeter.

some indication that will keep the kiln operators informed as to the development and progress going on in the kiln charge.

Converts to the gauging principle, as a general rule, derive such benefits from its practice, that it is rarely supplemented by any other system of indication. This fact it would seem, exhibits a verification of the basic principle underlying the system, namely, that of indicating results being attained in the kiln, than which there seems to be no

and his apprehensions of pinched and distorted product and all the serious results of overfiring seldom go awry.

It is not generally known to the trade, that many clays show a decided swelling or upraise in the kiln charge during the heating up stage of the burning, and that this uplift has a distinct relation to the proper or improper preparation of the ware throughout the entire kiln, for the higher or settling heats to follow. A careful study of the minute gauging of this uplift furnishes valuable information in the preliminary preparation of the ware insuring certainty and ease of settlement and a signal aid in producing uniformity and quality in the finished ware.

Thus it will be seen and appreciated that a meter, capable of micro-measuring the minutest movement in the kiln

charge, opens up possibilities hitherto unknown and unsuspected in studying the result of fuel combustion in kiln operation, and furnishes indication that will prove invaluable in the correction of all the firing factors.

Under this category will naturally and reasonably fall:— the determination of proper firing term with any particular kiln, furnace or fuel; the quantity of fuel feed and thickness of fuel bed; proper and sufficient draft; correct cleaning term; and in a word, the elimination of the inefficient and the adoption of the best method for particular kilns, material, and yard conditions as based on actual results constantly portrayed to the vision of the operator. As one kiln fireman expressed it, "Just like a steam gauge on a boiler, and about as necessary, we would be lost without them."

The Kilnmeter advertisement will be found in this issue.

OIL FIRING OF CLAY PRODUCTS

By W. D. Richardson.

THE INCREASING USE of fuel oil in the burning of clay products and the published accounts of the greater economy thereby effected have brought in many inquiries from manufacturers as to the advisability of changing their plants to this fuel. These inquiries generally call for information on the following points:

1. With coal at \$..... a ton and oil atc a gallon, which is the cheaper fuel?
2. What are the prospects of increase in the price of oil in the near future?
3. Are there any special difficulties in oil firing? If so, what are they?
4. What system of fuel oil firing and what burners are best for kiln burning?

While it is impossible to make a general answer to these questions that will apply in all cases, yet such information can be given as will enable readers of *The Clay-Worker*, who are interested in this subject, to consider it intelligently and to arrive at a decision in each special case that will, at least, bring no regrets.

So much has been published in various ways on the burning of fuel oil that it is not expected to bring out any new facts, but merely to present a digest of reports of investigations made by Bureau of Mines engineers and others and to describe the most approved practice in oil firing at the present time.

The writer was one of the early users of oil for burning brick (1888 in Minnesota), when crude Lima oil was only 15c a barrel. A few years later, in Northwestern Ohio, on the failure of the natural gas supply, he had further experience with oil firing, the oil being pumped into tank near kilns direct from the wells. At this time a number of brick manufacturers were using crude oil for burning brick, the methods not being so much different from the present, some spraying the oil with steam and some with compressed air. But this lasted only a few years, when the Standard Oil Co., having learned how to refine this heavy oil, refused to sell it for fuel. Some years elapsed before the present residuum of the refineries, known as fuel oil, was placed upon the market.

It has been known for the past forty years that oil is a good fuel for burning clay products. The main question has been and is today, in any special case, how would the cost of burning with oil compare with the cost of burning with coal?

Thermal Value of Oil and Coal Compared.

As to the relative thermal value of oil and coal, C. E. Beecher, Petroleum Engineer of the U. S. Bureau of Mines,

says that on the basis of heat units one ton of fuel oil is approximately equivalent to 1.46 tons of coal, but on the basis of actual operation one ton of fuel oil is more nearly equal to 1.79 tons of coal. Using the latter figure and taking the average weight of fuel oil as 7.7 lbs. per gallon, or 260 gallons of oil per ton, the following table gives the equivalent prices of coal at kilns and of oil in storage at kilns, from 2c to 8c per gallon for oil.

Equivalent Prices of Oil and Coal.

Oil, price per gallon	Coal, price per ton
.02	\$2.91
.02½	3.63
.03	4.36
.03½	5.08
.04	5.81
.04½	6.54
.05	7.26
.05½	7.99
.06	8.72
.06½	9.44
.07	10.17
.07½	10.89
.08	11.62

The labor and maintenance cost for small plants, where only one kiln is under fire at a time, is about the same for oil as for coal, but as the number of kilns increases this cost of labor and maintenance becomes less for oil than for coal. Moreover, since burning with oil is somewhat more rapid than with coal, there is a saving in time, which means a saving of loss from radiation, a saving in labor and a saving in interest on investment in kilns. This is partly counterbalanced by the interest on the additional investment in equipment for oil storage and oil firing. This increased investment on small plants will be about \$150 per thousand brick daily capacity but decreases somewhat per unit on large plants.

Advantages of Fuel Oil.

1. An equal weight of oil can be stored in approximately two-thirds of the space required for coal, and an equal volume of oil has 50 per cent greater heating value than coal.
2. Fuel oil does not deteriorate in storage to any appreciable extent. Coals deteriorate in storage.
3. No ashes, clinker or dirt, when oil is burned.
4. Smoke almost entirely eliminated.
5. Oil handled cheaper than coal—no handlers or stokers required.
6. A more intense heat can be secured with oil. Also a more

uniform heat and better regulation. No opening of furnace doors, with an inrush of air, and no lowering of temperature from cleaning of fires.

7. A smaller per cent of excess air is required, hence a smaller volume of waste gases and greater economy.
8. Flue gas analysis shows that less fuel is lost through the stack.

Stability of Price of Oil.

So far we are on firm ground. The relative thermal values of oil and coal and the special advantages of oil firing can be clearly and pretty definitely stated. In taking up the question of supply and prices, one cannot look far ahead with any certainty. We hear many different expressions of opinion as to our resources, some extremely optimistic and some just as extremely pessimistic. The fact is that few are able to make an intelligent estimate of our probable oil reserves, and even those few who are the best informed are very cautious about making any positive statements. The most reliable source of information for most of us is the Government Bureau whose experts are constantly investigating our fuel reserves and collecting statistics of production and consumption. So we cannot do better than to present a digest of facts and opinions given in a paper read before the International Railway Fuel Association at their Fifteenth Annual Meeting, May 22, 1923, by C. E. Beecher, Acting Chief Petroleum Technologist, U. S. Bureau of Mines.

Production and Consumption of Oil.

Production of crude oil has increased rapidly in this country in the past few years. Consumption has likewise increased, and in 1920 was greater than production, but at present, due to large flush production from new fields, production is gaining on consumption. "This period of over-production is only temporary. Similar periods have been experienced in the past when the flush production of some large fields has caused the price of oil to drop and stocks to accumulate. It is almost safe to estimate that within a year or two consumption will again approach production."

Coal reserves are of such a character that they can be estimated with a fair degree of accuracy, but this is not true of oil reserves, because of the many unknown factors that must be considered.

"At the present rate of development our oil reserves are being rapidly exhausted, yet the peak of production in this country has not been reached, neither has all the oil been discovered, nor has anyone been able to make a trustworthy estimate of when the peak of our production curve will be reached nor how rapid will be the decline thereafter."

Mexican oil has been an important factor in our economic oil problems and "present indications are that this source of supply is being rapidly depleted." "However, it is safe to say that all the big oil fields in Mexico have not been discovered and we may be importing oil from there for years to come, but no doubt at a price much higher than we are now paying for it."

Fuel oil is the residue of crude petroleum after extracting those products for which the demand is greater and from which the refiner secures a larger margin of profit. Therefore, the amount of fuel oil produced will depend upon the demand for the other products and upon the character of the crude. The largest quantities of fuel oil are produced in the California, Texas, Oklahoma and Kansas, and East Coast districts.

To meet the ever increasing demand for gasoline, improvements have been made in refining methods, so that more gasoline is extracted from a given volume of crude oil. "By the cracking process a much larger per cent of gasoline can be produced from a given crude oil and as this increase is

obtained from products that are largely used as fuel oil, the greater production of gasoline results in a decrease in the volume of fuel oil."

The most legitimate use of fuel oil is as a source of power by combustion in the oil engine. The oil engine, of the Diesel type, has proved most satisfactory for marine use, in fact has practically become a necessity to the navies of the world. The increasing demand for fuel oil for marine use will, in a great measure, regulate the price, since marine service will be given first consideration and will stand a higher price than most industries. Also, the Diesel engine is the most economical power for general industrial purposes and its use is rapidly spreading. So, since, like natural gas, oil is more advantageous for power than for heat treatment, it will command a higher price for this use.

We need not go into further speculation as to the price of oil. The fact is that at present the price is so low and that of coal so high that oil is the cheapest fuel for burning clay products in many parts of the country, especially on the Atlantic seaboard and on the Pacific coast, also in the Southwest and in those mid-continent sections where such oil is produced and refined.

We have aimed to present, as briefly as possible, such data as should enable any brick manufacturer to determine for himself whether it would be advisable for him to change to oil firing. It is not always safe to rely upon statements of those who, having adopted oil firing, and perhaps during a period of inflated prices of coal, and experiencing for the first time the many advantages of liquid fuel over solid fuel, have become so enthusiastic that they have allowed the publication of partial statements that are misleading. A case has recently come to the writer's attention where a brick and tile manufacturer spent considerable time and money getting information of the cost of burning with fuel oil, but after investing in equipment and trying it out at his plant, found that the additional cost of burning with oil, in his case, with cheap negro labor, cut into his profit to such an extent that he had to go back to coal.

(To be Continued)

THE LAW AND LABOR UNIONS.

Some time ago Attorney General Daugherty had entered a decree which was directed to be read to 100,000 members of bricklayers', masons' and plasterers' union limiting their activities in the matter of interference with workers and work. The law's decree in this case lays down the following basic principles:

1. There is to be no limit to the productive capacity of the individual workman within the working day or any other given time.
2. There is to be no limit upon the right of the employers to purchase their materials wherever and whenever and from whomever they may choose, whether those materials be union made or otherwise.
3. There is to be no favoritism shown by organized labor towards employers or trade associations, and no discriminations are to be indulged in against the independent employer who may not be a member of such an association.
4. The labor organization is not to be used or permit itself to be used by material men or contractors or subcontractors as an instrument for the collection of debts for enforcement of the payment of the alleged claims.

This was a court decree resulting from investigations into the New York housing situation. And the points made are plain and reasonable. The question is, to what extent labor union leaders may be prevailed upon to live up to them.



THE CARNEGIE INSTITUTE of Technology, Pittsburgh, recently conducted an essay contest on "The Use of Vitriified Clay Pipe in Plumbing Systems." The contest was nation-wide and the quality of the papers submitted by college students and craftsmen was exceptionally high, according to those in charge of the contest. The prizes, which were donated by the Eastern Clay Products Company, consisted of \$100 for the first prize and \$50.00 for second. William E. Morgan of Salisbury, Md., a student in the Plumbing, Heating and Ventilation Courses at Carnegie Institute, was awarded the first prize, and Thomas F. Moffett of Saranac Lake, N. Y., a master plumber, was awarded the second prize. Professor S. E. Dibble, head of the Department of Plumbing, Heating and Ventilation of the College of Industries at Carnegie Institute, was chairman of the jury of judges, and the other members were: W. J. Woolley, secretary-manager of the National Trade Extension Bureau, Evansville, Ind.; Joseph A. Welden, Welden-Kelly Co., master plumbers, Pittsburgh, and John T. Morris, director of the College of Industries, at Carnegie Institute of Technology. We give Mr. Moffett's essay this month and will follow with Mr. Morgan's in September.

THE USE OF VITRIFIED CLAY PIPE IN EVERYDAY PLUMBING PRACTICE.

NINE YEARS of experience as a master plumber has proved to the writer that the use of vitrified clay pipe in everyday plumbing practice is a most important matter of many possibilities. It appears that the wide utility of this product is overlooked and its great serviceability not fully appreciated by a great number of master plumbers, who thus limit their own best business opportunities.

Aside from its outright usefulness in many applications of sanitary practice, vitrified clay pipe is really a builder of larger plumbing business in general. It is also a medium for a timely and highly necessary economy, as well as a great satisfaction to many home owners and other users of plumbing. The economy comes from the saving in the first cost of this material, and in the easier, quicker and cheaper cost of its installation from the labor standpoint. It is a builder of business and a great satisfaction to many plumbing users because it helps greatly in the sales of finished bathrooms, laundries, kitchens and other plumbing equipment.

From his earliest experience in the plumbing business, the writer always carried a generous supply of vitrified clay pipe in stock. And the mere readiness with the material proved to be a boon on many occasions. The clay pipe was used at every proper opportunity and always with complete satisfaction. Furthermore, the material was always regarded with a cold eye, and its use honestly questioned as to whether it would serve the purpose in hand adequately and with any genuine economy in the procedure.

On the side of serviceability, the writer never had a "come-back" on vitrified clay pipe. It is true, for example, that the use of this pipe in some districts has resulted in growths of roots which stopped up house drains, and particularly where there were nearby poplar trees. Yet experience with hundreds of such installations has proved there was no after trouble so long as the clay pipe was carefully laid, and its joints properly filled with good Portland cement.

On the other hand, the writer has opened up streets on at least three occasions for the purpose of clearing roots

from cast iron drains. It is only fair to say that this happened because the work was first installed either carelessly or dishonestly. The workmen knew that the pipe would be quickly covered up, and they packed the joints too full of oakum and thus left room for only a flimsy ring of lead which quickly broke, loosened or corroded away. At other times it was found that iron pipe drains had been jointed together with Portland cement, once more apparently because of the haste or carelessness of those who had put it in. It does not follow that these or their employer intended to cheat, although they should have known that lead joints on iron pipe were the usual practice. It is just probable that experience had demonstrated to them the security and lasting qualities of Portland cement joints on underground pipes which are solidly laid and well covered.

If there is any moral to the foregoing, it is that whether using vitrified pipe or cast iron in house drains near to trees, the honesty and integrity of the master plumber is the controlling feature. The class of pipe used appears to have nothing to do with the matter. Either will make a proper and permanent job if carefully laid in a workmanlike manner. Experience has demonstrated to the writer that the only time iron pipe is essential for street connections is where necessity requires that the drain be placed within three feet of the surface and there is possibility of heavy trucking on the highway.

In speaking of the subject of vitrified clay pipe frankly with my customers, I have steadily centered on the point of economy. I have always considered it a large factor in the general propagation of increased plumbing business to keep the cost of the roughing work as low as possible, so long as it was serviceable and sanitary. After all it is the finished and exhibited plumbing product which maintains the progress and prestige of present American standards. In spite of all that has been said about proper piping "behind the wall," the public in general still knows practically nothing about the subject. And very often the public views such work with a well grounded suspicion. No one will question the wisdom of plumbing regulations, and yet the fact remains

that in thousands of communities there are no regulations whatever, although some of the very best of modern plumbing equipment is regularly installed.

I have brought up the point of economy in connection with clay pipe when discussing proposed plumbing with new customers, particularly in connection with all horizontal house drains. It is the common plumbing practice, for example, to run an iron house drain into a building and usually under the cellar floor. Where there are three or more main leaders, separate iron pipe branches from the drain are run out through the walls. This means several large masonry holes and plus, usually, several running traps for each leader. It means skilled journeymen plumbers to do the work, together with all necessary tools and fuel for lead joints.

Wherever the clay pipe was permitted, I recommended and installed that material in the great majority of instances. This meant that the vitrified clay pipe would be run from the connection at the street sewer to within a few feet of the front wall of the building. At this point I placed a double Y. Incidentally I have found that the five-inch house drain is ample for most buildings. From this double Y of vitrified clay pipe I would carry branches around each side of the house until they picked up all leaders. The iron



Thomas F. Moffett, Saranac Lake, N. Y.

pipe drain for the inside of the house would start with a length of pipe extending through the foundation wall and entering into the straight end of the Y. The rest of the inside drain would usually be a single straight run of pipe to the foot of a soil stack, eliminating all the fitting and cutting required for inside leader branches.

The foregoing may seem to be but a slight economy, and yet it embraces one of the most far-reaching possible to the use of clay pipe in modern plumbing practice. The single straight run of iron pipe represents a big saving in time and material, while the outside runs of vitrified clay pipe can be effected in short time and with less expensive labor, and not forgetting the big reduction in the cost of material and the necessary ingredient for pipe joints.

This iron pipe for inside horizontal house drains, I have used only where required by building regulations within cities. On the other hand, while still early in the business, I soon learned that highly desirable work was to be had out in suburban districts. In hundreds of such instances vitrified clay pipe was used for all the horizontal drains, both inside and out. At times indeed the vitrified clay pipe drains under basement floors were no more than six inches deep. And

yet they have remained in satisfactory service ever since they were first put in, and have depended for their security and protection upon the concrete floors which were laid over them on the cellar bottoms. In a great many instances of the kind it was first necessary to consult with the architect in charge of the construction. In all cases, with no more than two exceptions, the architects agreed to the use of vitrified clay pipe for this purpose when shown that it was intended as an economy and not as any sort of shift for the sake of securing a contract.

In discussing this matter with both customers and architects I have called attention to the fact that such a progressive state as Wisconsin permits the use of vitrified clay pipe for underground drains and within buildings. This means that iron pipe is freely connected into these horizontal pipes and their branches, such as an iron pipe fresh air inlet connected into a vitrified clay pipe house trap. This means that iron pipe is freely connected into vitrified clay pipe by the use of Portland cement joints.

I have also freely told customers and architects of the fact that it is common practice in England to use vitrified clay pipe in the same manner. I have demonstrated a typical installation such as that of the new public comfort station at Bournemouth, England. The regulations over there require that all drains be tested by both water and air pressure and prove absolutely tight. The air pressure is tested under a gauge, and surely there is no more exacting test of a drainage system. The general economy of vitrified clay pipe has been in my experience a great help in other ways which offered opportunities for splendid sanitary service, and also showed the way to gratifying extra profits. This has often occurred on country estates where septic tank sewage systems were required. The home owners wanted modern plumbing, and yet the cost of a full system seemed prohibitive. Yet when it was shown that through the use of vitrified clay pipe and a few fittings, plus a few concrete forms, a sanitary disposal system could be constructed economically, the work then went ahead freely in numerous instances.

Vitrified Clay Pipe Genuine Economy.

The vitrified pipe lent itself admirably for the purpose, fitting readily into cement forms and furnishing tight joints. It meant a few wooden forms, some mixed concrete and the necessary clay pipe, and then a quickly constructed septic system at a cost but a trifle of what would be necessary to purchase a manufactured installation. An outstanding consideration in all such instances is the gratification of the customers concerned. When the "rough work" could be accomplished with some real economy, all was well then for the best of finished plumbing equipment within the house.

I need hardly mention the fact that on several occasions I found that the installation of vitrified clay pipe proved to be a genuine economy, as well as a great satisfaction to the owners of buildings who were troubled with the deteriorating effects of acid wastes. In one instance, however, in a certain publication building in William Street, New York, a simple and candid recommendation of vitrified clay pipe to take care of an acid waste led eventually to several thousand dollars worth of extra business merely through the confidence won in the first instance.

Vitrified clay pipe has also played a large part in another department of my business. In short this product is of great service, both to the plumber and the heating man. Like most other establishments of the kind, my business had the two departments of plumbing and heating. I have used vitrified clay pipe with great economy and convenience for underground pipe conduits in at least a dozen instances. With the clay pipe laid on a foundation of loose stone and easily and quickly installed by ordinary laborers, I have found the product entirely dependable for installations of the kind. The sections of pipe are easily slipped into place and the heating mains quickly covered with either loose asbestos or regular covering.

In two instances, indeed, the ready use and distinct econ-

omy of vitrified clay pipe helped me to secure contracts for desirable heating jobs which otherwise would have been lost. These instances were old buildings having inadequate chimneys. It was easy enough to plan a high grade heating installation, but impossible to guarantee the work where the chimneys were deficient. New chimneys seemed to be the only recourse, and yet the expense of these presented serious obstacles.

At length in the first instance I thought of vitrified clay pipe for a new chimney. The owner then found it possible to go ahead because of the economy of the cost. A new chimney of eight-inch clay pipe was built outside of the house, with the joints of the pipe looking down and the whole resting on a secure foundation at the ground. A tee inserted near the ceiling of the cellar served for a branch for the smoke pipe from the boiler. A length of eight-inch vitrified clay pipe was run through the foundation wall from the tee. Later on the owner covered this outside pipe at his convenience, either with brick or concrete. At any rate I secured these heating contracts where they might never have been done had the chimney expense been a more serious item.

Vitrified Clay Pipe to Pipe Water Supply.

Having an ample stock of vitrified clay pipe on hand seems to be in itself an incentive and inspiration for its added use. At times I have received unexpected calls from farmers to use large quantities of the pipe for drainage purposes in swampy lands, and almost invariably such introductions have led to plumbing business of an altogether different kind. In another instance I had a customer who had built a high-class country home and wished to install a pressure water system.

I was anxious to get this order, and still the installation did not seem practicable. There were some springs on this man's land, yet none of them seemed large enough to promise enough water. Investigation revealed there were really seven small springs altogether, yet scattered far apart. An estimate was submitted to connect these all up with good galvanized iron pipe, and once more the cost seemed to present an impassable obstacle. Then came the thought of doing the same thing with vitrified clay pipe and at a big reduction in price. The order was speedily given and the water from all seven springs collected in a reservoir next to the lowest one. Once more it was easy to sell considerable extra plumbing equipment through the fact that the initial "rough work" was made comparatively inexpensive.

There may be those in the plumbing business who look narrowly at each order and believe they can see more satisfactory profit in pushing the sale of cast iron or galvanized iron pipe when vitrified clay pipe might be used effectively for the same purposes. My guiding principle at least has been to seek the sale of interior plumbing fixtures and equipment and to disregard the rough installation of piping as any worthwhile opportunity for profit. It is doubtful, indeed, if the best planned system of sanitary piping ever sold through its own influence a single extra bathroom, shower installation, kitchen outfit or water pressure system. On the other hand, the installation of the finished products become invariably silent though persistent salesmen for other installation of their own kind. The families possessing such equipment take a natural pride in it, and their friends and neighbors are bound to be impressed and then to copy. Even the growing generation of children in such well equipped homes are potential customers for similar equipment in the future, for it is unlikely they would ever be content to live without it.

Indestructible and Cheaper in First Cost.

The sales of this finished equipment furthermore bring larger sums and quicker turnovers of invested capital. All this is by way of stating that anything which will tend to reduce the cost of the mere installation of modern plumbing equipment is really a great help to increase business all along the line and all that it entails in extra profits and

satisfaction. And there will still always be a demand for iron pipe almost sufficient to tax the production powers of the trade.

The vitrified clay pipe can well be laid in all horizontal lines, and particularly where these are covered or underground. There would be a first saving in the cost of the material as well as a great additional reduction through the time saved in installing it and through the less skilled labor required. For years I had a foreman laborer who could be trusted completely with vitrified clay pipe installations.

Where it is desired to lay such lines accurately and straight, these can be guided as true as brick or stone in a wall and in precisely the same manner, that is, by use of a line. Well mixed sharp sand with good Portland cement will close up all joints in such a way as to make them absolutely tight and fast in binding. This same cement can be made completely water-proof by a simple mixture, if such cement were desired. Then there is a big saving in trench work where vitrified clay pipe is being used, owing to the fact that most of the excavated material can be taken from in front and thrown immediately back into the trench. This cuts the labor expense at least in half. It is the common practice to pile excavated material up on a bank and then fill it all in again.

I can only report that vitrified clay pipe has always been a large item in my business and that it was generally employed with such real economy, the ultimate results were most gratifying in every way. Unquestionably, vitrified clay pipe should be used much more extensively in everyday plumbing practice.

SIGHTS SIGHTED BY AN ITINERANT CLAYWORKER.

WE SAW ON THE FIRST brick factory of the Welch-Bright Company, Monaca, Pa., a 16 chamber continuous top fired kiln, burning high grade 9-inch straight fire brick, brand being circle "W," known all over the country, and a full line of square edge tile and other molded ware, on which the fires had only been out three times in forty-three years of continuous operation, with a very low fuel consumption. So low, that with the "sight" below I would be considered a liar. Can this record be equalled by any other kiln in the country? If so, where?

Rolled into one of the big Chicago yards—on our "rolls and coffee" for breakfast—saw them burning a 30 arch scove kiln containing 1,250,000 brick with oil—Gravity System. Burned the kiln in 48 hours from the time the fires were lighted in the arches—hard clear to the top—could not tell the difference between the brick under the platting and the brick above the arches, in color, hardness or size. Burned with less than 10 gallons of oil per thousand brick.

These yards use burned brick for scoving, and when shipping brick ship scoving brick and all. Build up new walls for each kiln. In shipping daubing wears off. Temperature of kiln while burning, as shown by Brown Pyrometer, runs about 2,000 degrees F.

For speed, capacity and low fuel consumption, can this record be equalled? If so, where? **BIG SIX.**

SAFETY COUNCIL MEETING.

THE 25TH ANNUAL CONGRESS of the National Safety Council is to be held at the Statler Hotel, Buffalo, N. Y., October 1-5. The plans are to have a number of sessions of special and general interest and a complete educational exhibit demonstrating educational work done during the past year.

It is a whole lot better to do the things you should do than to explain why you haven't.

AT LAST THE FAIR BRICKLAYER.

THE "WOMAN BRICK LAYER" has arrived and, judging from appearances, has added materially to the attractiveness of the craft. Mrs. Florence Thompson is young and attractive. She has a desire to help carry on and picked out brick laying for several reasons. First, her husband runs a brick laying school at 352 W. 53rd St., New York, and after teaching the pupils at the school he is sent out on the job for practical experience. Mrs. Thompson takes charge of this teaching on the job while her husband remains in the school.

But Mrs. Thompson has another reason and that is the pay is good and she feels that she may as well do something she likes to do and is capable of doing and for which she gets top notch pay, rather than pound a typewriter in a stuffy office at a fraction of the compensation. And so she lays brick and lays them well.

Brick manufacturers will wish her the best of success and will extend a portion of their good wishes to the husband who runs the brick laying school because more brick layers are vital to filling the demand for brick. Brick are the best building material but they are of little value as such unless there is a competent mason to lay them in the wall.—American Clay Magazine.

Young Woman Can Handle Mortar Like Expert.

"I maintain that laying bricks is an art as well as a science. But it's not so hard to do after you get the knack of it."

Anona Hildebrandt, an attractive girl, barely out of her teens, according to the Los Angeles Examiner, stood, trowel in hand, recently, and surveyed a twelve-foot wall, forty feet long, that is to form part of her home in the hills of Hollywood, and spoke of her handiwork. It is a straight and true wall and would do credit to any master of the trade.

"You've got to know a few things about mortar, and there are certain rudiments of the business that you must master before you can become a proficient brick layer," she went on. "A girl can lay bricks as well as a man, if she wants to," she boasted.

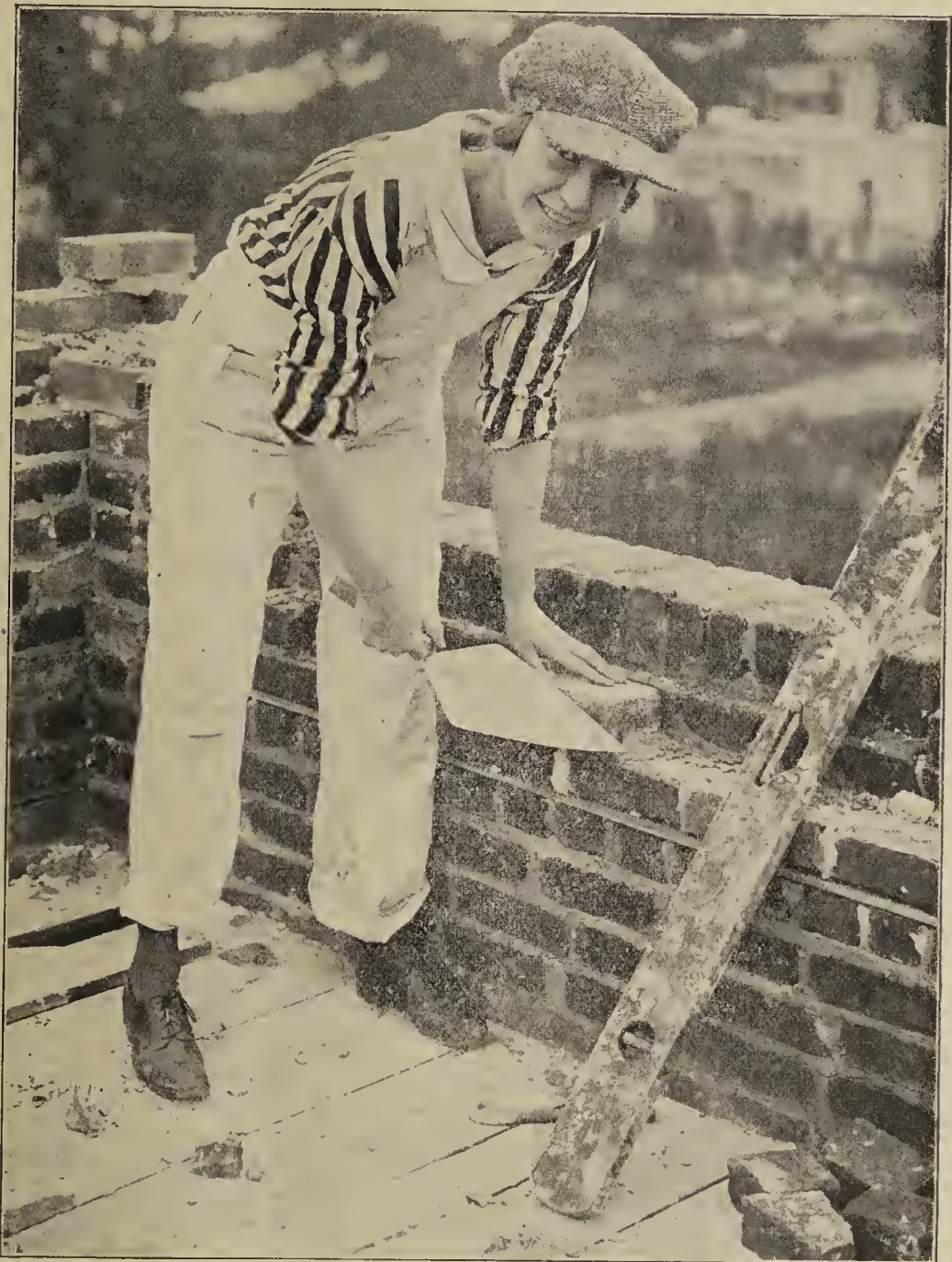
"It can't be done in an evening gown, however," and she laughed as she surveyed the overalls she wore, and then she went on to relate how it happened that she is laying the bricks for her new house.

"Some years ago, on my father's place, we dug a well. A brick mason, hired to build the wall, couldn't finish the job. I told father I'd do it. He dared me to, and it was while finishing this work that I learned how to put brick in place.

Of course, on this house, I had an expert set the foundation for me. The rest is easy—that is, easy to accomplish; but don't forget for a moment that handling brick is hard work."

Why Not Use the Mann Trowel?

If these young women would learn to use the Mann Patent Trowel, illustrated on page 193 of this issue, they could halve their labor and double their daily task. That is, they could lay twice the given number of brick in a given time with half the labor required with the old trowel.



Mrs. Florence Thompson, the "Woman Brick Layer" of New York City.

A CANADA SILICA REPORT.

A REPORT on silica deposits of Eastern Canada by L. Heber Cole, discusses the occurrence, exploitation and uses of this product and describes at some detail the many occurrences of material in Eastern Canada. The report comprises 119 pages, and is profusely illustrated and carries maps showing distribution of silica deposits. It may be obtained by application to the Department of Mines, Ottawa, Canada.

Written for THE CLAY-WORKER.

GEORGIA BRICK NEWS.



BRICK AND CLAY products industries throughout the Southeast continue steady operations at close to the capacity point of production, and with ample business in hand to insure a steady activity for some months to come. Recently there has been a slight falling off in the demand for brick and kindred products, but this is recognized by the industry as the usual summer slump and is causing no concern. It has resulted, too, in bringing about a downward tendency in some prices, with common brick off about \$1 per 1,000, though most of the other products remain on a comparatively stable price basis.

Construction over the whole Southeast still is going on apace, though during July there has been a slight retarding movement because of the exceptionally hot weather that has prevailed. In Atlanta alone indications point to a building year of nearly \$35,000,000, by far the biggest year in the city's history. Construction is more active in Atlanta than elsewhere in the South, but over the whole district is materially above the mark of last year with every promise of continuing with little abatement for the rest of 1923. Many of the larger industrial centers of the district, in addition to Atlanta, will undoubtedly establish new construction records in 1923 in point of value of construction. A majority of this work has been, and will continue to be, in hotels and apartment houses, churches and schools, office buildings and factory additions, a large part of the work in brick.

According to authentic information obtained at the state capitol in Atlanta, and covering activities over the whole South, the brick and clay products industries during the first six months of 1923 witnessed the greatest period of expansion in the industry's history in this section. While it is impossible to give any definite figures covering this activity, it is certain that at least 75 new brick and clay products manufacturing plants have been established, or announced to be established, during the first six months of this year; this includes new companies that have been formed, of which there were an unusually large number, and additional plants established by existing companies. It is not believed by men of the industry in the section that this record has ever before been approached in this section over a six months' period. Indications portend continued activity in this regard through the rest of the year, due to generally favorable conditions.

According to the monthly report of the Federal Reserve Bank of Atlanta, production at the brick plants in this district the first six months of the year was on a basis of from 25 to 35 per cent. greater than during the first six months of 1922, and has continued to increase to some extent every month since the first of this year up to May, since when production has held about stable. There also has been improvement in the number of employes and from 20 to 30 per cent. more unfilled orders on hand.

Export trade in brick and the kindred lines manufactured in the clay products plants of the Southwest will undoubtedly establish a new record for volume this year, for this business has been on a steady increase since the first of the year. Much business in brick has been done with Cuba and other Latin-American countries, and those southern manufacturers who have been going after this trade have reaped the profitable benefits. These Latin-American countries offer a great potential market as yet undeveloped, and there is business to

be had here for the manufacturers going after it in the proper manner. Principal ports showing increases in the South have been Norfolk, Va.; Charleston, S. C.; Savannah, Ga., and New Orleans.

There have been freight rate increases on common, building and pressed brick in the Southern states announced recently, in spite of the efforts that have been made by the Southern manufacturers to hold rates at a stable basis. The new schedules are to become effective on August 15th, and generally will serve to increase the rates in virtually all of the southern states. As compared with the present rates the new schedule provides quite an increase, and is very likely to shortly result in an advance in brick prices generally throughout the district. At the hearings on this matter the southern manufacturers proposed a schedule that would have held the rates about on the same basis as they were, but the carriers won their point, as shown by the increases to be made. What effect this is likely to have on building and on general conditions at the plants throughout the South remains to be seen, but that it will have some effect is certain.

In Georgia hearings have recently been in progress before the Georgia Public Service Commission for a revision of some freight rates in the state on clay products and other lines, the revision creating increases in some instances and decreases in the rates in other instances. The industry in Georgia is vigorously opposing any further advances in the present scale of rates.

Alabama producers are preparing to file a protest against the increased rates as above stated, and will undoubtedly be joined in this movement by other manufacturers throughout the district. The protests will be filed with the Interstate Commerce Commission, the contention being offered that the increases granted the roads, which in some cases are as high as 30 per cent., are discriminatory and will reflect against the brick and clay products industries in the South. Manufacturers at this time feel that they should not be called upon to shoulder any additional freight burdens, and will strenuously oppose the new schedule so long as there is any hope at all of winning their point.

The refractory possibilities of Georgia clays as developed through research conducted by the Bureau of Mines with the co-operation of the Central of Georgia Railway Co., and the clay products manufacturers throughout the state of Georgia, is outlined in detail in a booklet that has recently been issued and is being distributed to interested persons by the railroad company. A copy of this booklet, or pamphlet, can be secured by any interested reader of *The Clay-Worker*, by writing to W. A. Winburn, Atlanta, president of the Central of Georgia company.

According to the information contained in this booklet these tests, which were largely made at Columbus, O., of clay furnished the bureau by the railroad company and certain Georgia brick manufacturers, indicate that there are great possibilities for the wider and more varied uses of Georgia's vast clay deposits and resources, which are as extensive in the state as in any other section of the country.

Expansion of this industry is almost certain to follow the establishment of the School of Ceramic Engineering at the Georgia Technology School in Atlanta, interested manufacturers state, for at this school Georgia boys will be trained in ceramic engineering for the development of the state's resources in this regard. As previously stated in *The Clay-Worker* this school now is an assured fact, thanks to the hearty co-operation of the brick manufacturers throughout the state who are furnishing the money and materials necessary.

The Cherokee Brick Co., 508 Mitchell St., Knoxville, Tenn.,

started operations at its new plant in that city in July, a plant that is said by experts to be one of the finest and most modern brick manufacturing plants anywhere in the Southern field. The initial capacity is approximately 50,000 bricks daily, the plant proper, including machinery, representing an investment of about \$175,000. The company is composed principally of a group of well known business men of Knoxville, headed by Roy M. Newman, who is president of the company. The plant at Knoxville has been in the course of construction for the past few months.

P. O. D.

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



ALTHOUGH REPORTS from many sections indicate that building operations have slackened up to some extent because of building costs, the construction situation in Milwaukee is as favorable as any time this year. Operations during the first seven months this year have reached a valuation of \$23,441,204, and the number of permits issued to date is in excess of 22,100. In the corresponding period of last year the building inspection department issued 19,804 permits for operations representing expenditures of \$18,374,284. For the month of July, this year, the number of permits issued was 2,543 for \$4,125,063, while a year ago the permits numbered 3,072, valued at \$3,161,602.

The Jefferson Brick & Tile Co., which recently disposed of its yards and business to the Kemmeter Brick & Tile Co., at Jefferson, has filed articles of dissolution as a Wisconsin corporation.

Articles of incorporation have been filed by the Black Creek Tile Co., of Black Creek, with \$7,000 capital stock. George J. Riehl, F. A. Brandt and A. E. Woody are the incorporators. Concrete drain tile and similar products will be manufactured.

In the case of the Wisconsin Clay Manufacturers' Association vs. Ahnapee & Western Railway Co., et al., an order affecting a considerable reduction in freight rates on common brick, sand lime brick and concrete products has been issued by the Wisconsin State Railroad Commission. The new order is hailed as a big victory for the Wisconsin clayworkers who have carried on the fight for more than a year. Last September the commission ordered a reduction, but the carriers requested a rehearing, which was granted. The reduction now effective should cheapen the cost of clay building materials and result in increased building operations, manufacturers and dealers here state.

The order of the commission makes two distinct schedules of rates, one for common brick, sand lime brick and concrete products, and the other, considerably higher, for face, fire and paving brick and other clay products. Practically all brick and concrete products moving locally within the state will be affected. The double schedule is said to be a new departure as regards brick rates in the state, all the products named formerly taking the same rates. The double schedule is designed to keep Wisconsin rates consistent with interstate rates, the Interstate Commerce Commission having issued an order some time ago requiring carriers to make a 10 per cent. difference between the interstate rates for common brick and those for higher grades of brick and other clay products.

The bulk of the trade affected by the new order is common brick and concrete blocks. For a distance of 20 miles

the rate will be reduced from 5.5 cents to 4 cents; for 55 miles from 7 cents to 5.4 cents. The higher schedule applicable to the higher grade of brick and clay products affects some increases in the rates for longer distances, and decreases for the shorter distances. The lower schedule for common brick and concrete blocks is restricted to distances of 150 miles or less.

The new order supercedes the former order of the commission and the rate cut affects eight principal lines in Wisconsin railways.

Fire of unknown origin destroyed the main building of the Stevens Point Brick Manufacturing Co., at Stevens Point, causing a \$15,000 loss, which is covered by \$9,000 of insurance. The building, of frame construction, housed the boiler room and brickmaking machinery. Firemen were able to save a large quantity of cord wood and the adjoining buildings by pumping water upon them from a clay pit.

The Stanley Red Pressed Brick Co., at Stanley, has suspended operations for the season, according to word received in Milwaukee. The company is composed of local stockholders who several months ago took over the property. The excessive demands of bricklayers and consequent slackening up of building operations is given as the reason for suspension of operations, having resulted in a dull market.

A BADGER.

WILMINGTON PROUD OF THE OBERLY BRICK CO.

In a recent special industrial issue of The Delmarvia Star, published at Wilmington, Del, a very fine tribute is paid the Oberly Company, brick manufacturers of that city. The business was established thirty-five years ago by James B. Oberly, whose death was noted last month, and is being carried on by his sons, Howard H. and Charles M. Oberly. The plant has an annual output of 15,000,000 brick, nearly all of which are used in construction work in Wilmington or the immediate vicinity. The plant is equipped with soft mud machines, and the brick are dried by steam and burned in six down draft kilns. Both Charles and Howard Oberly have grown up in the business which they expect to continue along the same lines laid out by the founder.

TRADE NOTES.

A charter has been granted the Aberdeen (Md.) Brick Company, with authorized capital of \$100,000.

The Phoenix Brick & Tile Company has been incorporated at Dallas, Texas, with \$40,000. Those interested are C. W. Martin, H. E. Spafford, P. S. Russell.

Now that the eight-hour shift has come to the steel mills we will probably have an end to the eight-hour talk—and the starting of another shorter hour campaign with six hours as the basis for a day's work.

The Davenport Clay Company has been incorporated at Davenport, Texas, with \$75,000 capital stock. The incorporators: C. A. Noll, Wichita, Kan.; F. C. LaFountain, Kansas City, Mo.; R. L. Livingston, Blackwell.

The Hamilton Clay Manufacturing Company, manufacturers of brick, tile and crockery at Hamilton, Ill., has certified to the Secretary of State to an increase of capital stock from \$100,000 to \$150,000. The president of the company is Apollos W. O'Harra, of Carthage, and the secretary is R. A. Graham, of Hamilton.

The Clay Products Company, of Fullerton, Calif., has been organized and will establish a plant near that city for the manufacture of common building brick and hollow tile. George R. Whitcomb is at the head of the enterprise, and Charles W. Parks, an experienced ceramic engineer, will have charge of the construction of the plant.

Written for THE CLAY-WORKER.

OHIO CLAY NOTES.



FOLLOWING INTERRUPTIONS, due to mid-summer vacations and the annual convention of the National Brotherhood of Operative Potters, ceramic operations in Ohio returned to normal the first of the month. Production now shows an increase compared to the early days of July when there was considerable letup in output because of suspension of certain departments of the plants. During the lull, manufacturers overhauled machinery and made necessary repairs so that everything will be in shape for steady operations throughout the remainder of the year.

Anticipating a gas shortage next winter oil burners for kilns are being installed in Newell, W. Va., which is a part of the East Liverpool district. Several other plants in the district are similarly equipped.

Shipping records were broken by several pottery concerns during the first six months of the year. Trade conditions are especially promising.

The Bahl-Shem China Co. has begun operations in Canton, O. A factory location has been secured and decorated ware is already being turned out. This concern, headed by John Bahl, will decorate high grade china. Mr. Bahl for many years has been identified with the ceramic industry, he having for several years been in the game himself, and previously was associated with the Knowles Taylor and Knowles China Co., at East Liverpool, O.

Benjamin F. Harker, 64 years an executive of the Homer Laughlin Pottery Co., East Liverpool, O., and Newell, W. Va., died recently at his home in that city. He had been identified with the ceramic industry since the days of his youth, having been first associated with his father, the late Benjamin Harker, Sr. Nearly 25 years ago he joined the Homer Laughlin organization. Burial was made in East Liverpool.

The Brunt Porcelain Co., located at Chaseland, a suburb of Columbus, O., is having a good run of business in porcelains for all sorts of insulation. The company also manufactures ground insulators. W. F. Steele, the general manager, reports that all improvements to the plant and machinery started a year ago have been completed and the capacity is now up to what is required. A large force of men is being employed continually.

At a recent meeting in Massillon, O., of the board of directors of the Stark Glass Company, it was decided to discontinue the experimental operation of the Winder-Daubenspeckt wide mouth jar machine at the plant of the Rhodes Bottle and Glass Co. The directors, before ordering the tests discontinued, passed a motion declaring the machine a success. A report of the cost expert, who last week made a survey of production, was received. Directors this week said the report was favorable. Another meeting of directors will be held in the near future to consider future plans of the company.

The Alliance Pottery Co., Alliance, O., has been reorganized at a meeting of the stockholders. Operations are expected to begin immediately, it was stated this week. The concern was organized in Alliance last fall with a capitalization of \$100,000. A new plant was erected for the decorating of pottery and glass. Lack of capital, however, prevented the plant from getting rightly started in the production of salable ware. A number of new stockholders have become interested, increasing the capital stock to almost three times the original amount. The new board of directors are W. H. Purcell, F. A. Hoiles, B. F. Weybrecht, C. B. Cassady, E. L. Guthrie, C. B. Smith and George McKee.

The Massillon Refractory Company is making a number of repairs to its plant at East Greenville. It is putting a new track on the east side of the plant and the track on the west

side is being made longer. The plant is operating at capacity at this time.

The Art Tile Co., Beaver Falls, Pa., is installing a second Dressler tunnel kiln for glost firing. It is being built under the supervision of the American Dressler Tunnel Kiln Company's engineers. The first kiln was built about five years ago. The company has retained Robertson Pease Co., to take charge of the designing the new part of the plant and to purchase the various equipment needed.

The first kiln of brick was burned recently at the new plant of the Canton Brick and Fireproofing Co., near New Comerstown. Continued production is anticipated, officials of the company announced this week. W. A. Demuth, of New Philadelphia, O., is president of this concern, which is one of the largest producing companies located in this district. Two other plants of the company are located at Canton and Robertsville, O.

Charles Keller and William Keller, both of Cuyahoga Falls, ask judgment for \$37,149.84 from the Duro Brick Co., here, in a suit filed in common pleas court, Akron, this week. The petition alleges that the Duro Brick Co. executed several notes to the plaintiff and that the principal and part of the interest are unpaid. The Kellers ask the court to foreclose on property of the Duro Co., located here, and that a receiver be appointed pending the outcome of the suit.

Organization of a company to make use of extensive shale deposits at Orangeville, near Warren, was made known with the announcement of the formation of the Orangeville Brick and Clay Products Co. Plans for the erection of a plant at Orangeville are being rushed. Erection of this plant will mark the culmination of numerous efforts to interest capital in the development of a brick manufacturing plant to make use of the Orangeville shale deposits. Warren, Youngstown, Niles and Sharon capital is interested in the venture.

The General Fireproofing Co., Youngstown, earned for the first six months of 1923, after charges and preferred dividends, a common dividend for that period more than five times. The favorable results for the first six months in connection with the satisfactory earnings for 1922 have wiped out the losses of 1921 and greatly strengthened the position of the company. Recently new business has shown improvement. The company is operating to capacity and bids fair to show net for common this year equal to or more than 40 per cent. of the present market price.

Progress is being made on the new plant of the Homer Laughlin China Co., at Newell, W. Va. The buildings are now under roof, and the glass sides are now being installed. Work on the tunnel kilns have begun. There will be three such kilns, each of the Harrop type, one each for glost and bisque ware and the third for decorated ware.

The Buckeye Clay Plant of the McLain Brick Works partially suspended operations the first of the month for at least a month. Although unable to announce definitely the date of resumption, the plant will start again about the first of September. Slight lull in business and an accumulation of products are said to be causes for the suspension.

N. E. Loomis, 67, general manager of the Mosaic Tile Co., of Zanesville, died recently at his home in that city. Mr. Loomis, who was widely known in the clayworking industry, went to the garden in the rear of his home and while there was stricken ill. He had been connected with the Mosaic Tile Co. for many years. He was an expert in the clay industry.

A BUCKEYE.

NEW CHAIRMAN OF JURISDICTIONAL AWARD BOARD.

Rudolph P. Miller, consulting engineer of New York City, the representative of American Engineering Council on the National Board for Jurisdictional Awards in the Building Industry, was elected chairman of that board at its recent meeting in Atlantic City, New Jersey.

He who becomes the popular hero of the day is in danger of becoming the fallen idol of tomorrow.

Written for THE CLAY-WORKER.

WITH ALABAMA CLAYWORKERS.



IRMINGHAM'S BUILDING program continues daily, with thousands of dollars going into factories, business blocks and residences.

The latest project under consideration is a \$3,000,000 warehouse which the Break Bulk Bonded Warehouse Company is contemplating building. This proposed building would give to Birmingham the largest warehouse in the southern states. Stock for the purpose of building this warehouse will be placed on the open market.

This building is to be erected of brick and concrete, made fireproof and modern in every respect.

A six-story building is being erected by Louis Pezitz for a department store. This is nearing completion and will be finished within a few weeks.

A seven-story Masonic Temple is being erected by the negroes of Birmingham and will be one of the finest buildings of the kind in the city.

Several thousand dollars is being spent on remodeling the Hillman Hotel. Numerous business blocks and residences are being erected in every part of the city.

There has been no change in the price of brick, tiling and other clay products since last spring. Recently there has been a reduction of from 10 to 15 per cent on the price of most classes of lumber.

Skilled mechanics are finding plenty of work at good wages. There are sufficient skilled workmen to be had at this time. Common labor is scarce and in demand, as many negroes continue to go to the northern and eastern cities where common labor demands a better price than it does in the South.

The Three Brick Company at Tuscaloosa, Ala., has completed its fourth kiln and the plans call for the building of two more, making six in all. This plant when completed will have a capacity of 115,000 brick. The plant is now operating, making clay brick. Later on rough texture shale brick will be manufactured.

The Superior Lime and Hydrate Co. are completing a new lime plant at Phelam, Ala., which will have a capacity of 15,000 barrels of lime per month. The plant has four large kilns. The officers of the company are: W. D. Lewis, Jr., president and treasurer, and H. B. Bridgeworth, vice president and secretary.

Traffic men estimate that something like \$60,000 a year will be saved for home-builders of the Birmingham (Ala.) district alone, and that over \$1,000,000 a year will be saved to the home-builders of the southern states in the suspension of the Interstate Commerce Commission of the revised rates filed by the carriers on brick and other clay products, which became effective August 15.

Although the Interstate Commerce Commission, in making its decision, specifically stated that the preservation of the carriers existing revenue should be the guiding rule, in carriers in almost every case, increased the level of brick rates to that prevailing on hollow building tile, which was included in a uniform brick list prescribed by the commission.

John W. Sibley, of Birmingham, chairman of the Southern Brick and Tile Manufacturers' Association and general sales manager of the Birmingham Clay Products Company; M. B. Greenough, vice president of the Southern Clay Manufacturers Company, of Chattanooga, Tenn., and C. E. Jones, secretary of the Birmingham Traffic Association, brought the petition for the suspension before the commission.

The action of the commission means a great deal to the brick and clay manufacturers and consumers of the southern states. Particularly is it reckoned a telling victory gained by those who advocated the suspension in view of the fact that the commission refused to suspend the revised rates on

iron and steel articles, furniture, agricultural implements and canned goods, which became effective July 1 and which was protested against by shippers throughout the southern states.

The Alabama Public Service Commission also filed petitions for the suspension with the Interstate Commerce Commission.

The Harbison-Walker Refractory Company will soon commence work at Bessemer, Ala., on a \$600,000 plant for the manufacture of tile, fire brick and other clay products. This will be the largest plant of its kind in the South when completed.

Recently the Harbison-Walker Refractory Company purchased from the Bessemer Iron and Land Company a tract of land for the site of their new plant at Bessemer, consisting of ten city blocks. The land extends from Fifth Avenue to Alabama Avenue, and from Thirtieth Street to Thirty-second Street. A large crew of men are grading and macadamizing Thirty-second Street, which borders the property on the east.

The survey of the property will commence at once and within a few days construction work will commence on the buildings. Several railroad sidings will be built into the property at once. The property is convenient to several lines of railroad and the spur tracks can be built at small cost. When in full operation this plant will employ 300 men at good wages.

Childersburg Brick Company, at Childersburg, Ala., is protesting against unreasonable freight rates on brick in carload lots to Birmingham, and are also protesting against switching rates, in a petition filed by them before the Alabama Public Service Commission.

A. L. A.

VACATION TIME.

The cleverest vacation announcement which has reached The Clay-Worker sanctum this season is that of Proctor & Schwarz, Inc., of Philadelphia, ad on back cover. It tells a luring tale, so we reproduce it for the benefit of the stay-at-homes.

We are going to take
A few days off,
shut up shop and hotfoot
it to the ol' swimmin' hole
Aug. 25th to Sept. 4th.

If you need anything in
our line, we would like
to tackle the job before we
go. However, a few of
the men have had their
holidays and will be right
on deck for repair parts
and service during shut-
down week.

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA





THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Brick Plants Running Steady.

Editor The Clay-Worker:

The brick and building situation here in Martinsville has been exceedingly good the past six months and indications are that it will continue so the remainder of the summer and fall. We have several jobs already started and quite a number contemplating building, so as a whole we have enjoyed a very good year in the brick and building lines. We have not had any labor trouble to curtail any work so far, as we have had both common and skilled labor to meet the demands. Face brick is selling at from \$18.00 to \$25.00 per M, and common brick, \$10.00 per M at the factory. All four plants in this vicinity have been running steady throughout the year. Trusting that this will find your business good and prosperous, I am,

Yours very truly,
Martinsville, Ind. FRED PARKER.

WILL GIVE MANN TROWEL A FAIR TRIAL.

Editor The Clay-Worker:

"The Clay-Worker" has told such an interesting story in the July issue that I have made a new resolution—to make some of our hard-headed, though big hearted, customers try out that new trowel if I have to use a club to get 'em to do it. Have talked it since it was first mentioned without results, so if you will forward a couple immediately—the half-inch size I suppose, though you know best, with all instructions and accessories, we'll do our part at this end.

Power to you and Mr. Randall in your effort to awaken the craft to the seriousness of their present attitude.

Yours very truly,
H. G. FINLEY, Pres.-Manager.
Fort Collins Pressed B. and T. Co.

No Shortage of Brick in Texas.

Editor The Clay-Worker:

Replying to your letter of recent date we beg to advise you that there has been considerable talk and newspaper propaganda on the bricklayers' union proposition to build a brick plant in Dallas. At this time we do not have any information which is authentic, but we doubt very much if this project will be put over.

The statements which were made in the papers are absolutely the reverse of the truth. We believe we have one of the lowest common brick markets in the United States, and for the last two years have had too many plants in this territory. We have 13 plants within a radius of 60 miles of Dallas. All of the same capacity, about 40,000 per day, and we feel sure that 4 of the plants could have taken care of all the brick business in this territory.

The plants have been running about 30 per cent of capacity, and the present price basis ranges from \$7.50 to \$8.50 per thousand at the plant. Selling in Dallas for \$10.00 f. o. b.

cars. For the good of the industry we certainly hope that this proposal for a new brick plant will be abandoned.

Yours very truly,

A TEXAS SUBSCRIBER.

Venezuela Firm Wants Information in Regard to Continuous Kilns.

Editor The Clay-Worker:

Your reply to our recent query addressed to our Mr. Sanchez Vegas is in hand, as well as a copy of Clay-Worker, which we have found very interesting.

Due to the lack of time by this mail, we are not sending you check to cover a yearly subscription, but we will take advantage of the next boat and send you subscription blank already filled as well as an order covering a few books that we are interested in.

Through your paper we have been favored with many offers from manufacturers of brickmaking machinery, and we will appreciate if you put us in touch with constructors of continuous kilns, in which we are interested.

Thanking you in advance for your kind attention, we remain, very truly yours,

DOMINGUEZ & CO.

Maracaibo, Venezuela, South America.

Making Improvements to Increase Efficiency Rather Than Capacity.

Editor The Clay-Worker:

Improvements which are being made in our plant are largely for the purpose of increasing its efficiency, rather than its capacity.

The capacity of our Macon plant is already far in excess of the demand, in fact the brick business is being overdone throughout our state, and as well throughout the Southeast.

The brick business is one that has been very crude, and due to that fact, obsolescence works very rapidly in our plants. As the methods of manufacturing brick are being improved daily, it requires an enormous amount of money to keep up with the procession. A plant must, in order to compete successfully, install modern machinery and adopt modern processes as they develop, all of which requires a large outlay of money.

We are rehabilitating our plant, but we are not increasing its nominal capacity, though of course, improving its efficiency will naturally increase the percentage of merchantable products, and consequently its capacity. We are doing everything possible to make our products of the best quality.

Competition on clay products throughout the Southeast is very keen and the trade is only to be satisfied with goods of the highest quality. In addition to that, building codes are being revised so as to protect the public against dangers resulting from the use of poor material and against loss of money resulting from the same cause.

While these facts make the successful operation of the manufacture of burned clay products much more difficult than formerly, it also makes it very much more interesting to the manufacturer with the proper intestinal equipment, and discouraging to the ones who lack it and will in the end result in the standardization of our products.

We are manufacturing in large quantities, common brick, face brick and hollow building block and are planning to add another unit for the manufacture of a high-grade fire brick in the near future.

Our plant is one of the most modern in our country and we are always glad to show any one through who is inter-

ested. The Standard Brick Company, of Macon, Georgia, has the exclusive sale of all of our products.

Yours very truly,

CHEROKEE BRICK COMPANY,

W. E. Dunwody, Vice President.

Written for THE CLAY-WORKER.

KENTUCKY BRICK NEWS.

THIS HAS BEEN a good year in the brick trade in Louisville and all through the state, and though for a while it looked like a little let down in the demand during the mid-summer season the situation has lately put on an entirely different aspect with every indication that the fall volume of business will be equally as good as that done in the spring and that building operations will continue through the fall and winter as they did last year. Practically all plants serving this territory are shipping out brick as fast as it is cooled and have orders ahead to keep them busy through the balance of the summer.

A recent visit to the Barbourville (Ky.) Brick Company, showed that they had no surplus stock on hand but were shipping out as fast as kilns were cooled and were using fans to shorten the time of cooling down.

A. H. Schneider & sons, of Nicholasville, report that they are very busy shipping out brick as fast as they can and it is ready, and this seems to be pretty much the story all over the state.

At Louisville not only are all the plants busy but they seem to have plenty of orders ahead to keep them hustling and there is so much brick work going on that bricklayers are hard to get promptly at times to carry on work.

J. T. Howington, of the Coral Ridge Clay Products Company, says they have not only been busy all through the summer but they are still just as busy as ever and a monthly check-up at the end of July showed that they had just as many unfilled orders on hand the first of August as they had the first of July. This they think is pretty conclusive proof that there was no mid-summer let down in the volume of business. Their business for the first half of the year, that is up to July 1, was about evenly divided between brick and tile. During July, however, they were practically altogether on tile, and the unfilled orders on hand at this writing are made up of about 75 per cent tile and 25 per cent brick. So it looks like during the latter half of the year they will be called upon to make a larger percentage of hollow building tile.

One of the most imposing new structures of the year in Louisville is the new Brown Hotel. The face brick for this was furnished by the R. B. Tyler Co., and it fits the name of the hotel as it is a brown range of shades, being No. 501 of Western Brick Company. It is a beautiful face brick, too, and the R. B. Tyler Company display a panel of it with the announcement of its use in their front show window along with another panel in brown of Western Brick which is being used in the new Atherton High School.

W. E. Whaley, brick distributor, has moved into new and larger quarters lately, taking rooms 506-507 in the Marion E. Taylor Bldg., where he is laying up an elaborate display of face brick panels. Mr. Whaley recently landed an order for a million brick to be used in the new gas plant of the Louisville Gas & Electric Company, the order consisting of a third of a million soft glazed, a third of a million select red, and a third of a million common.

He reports that there was some inclination toward ease-ment in the demand and building activity early in July but this has passed now and there is noticeable a new feeling of activity and busy times which it is cheering to see.

The effort to have an eastern group meeting of clay prod-

ucts manufacturers at Middlesboro in conjunction with the mid-summer gathering of retail lumber dealers resulted in several of the boys making the trip to Middlesboro but no formal meeting was held. Among those attending were A. H. Schneider, of A. H. Schneider & Son, Nicholasville; L. L. Richardson, of the Barbourville Brick Company, Barbourville; and T. E. Howington, Coral Ridge Clay Products Company, Louisville, who had a little formal talk fest, and later the manager of the Corbin Brick Company arrived but was unable to connect with the other boys who were out sight-seeing with the lumbermen.

All those attending reported busy times, and among the lumber yards in the mountain towns and the dealers assembled there was evidence of an awakened interest in brick, sewer pipe, hollow building tile and other clay products which promise to become more important items in the list of the retail dealers. Some good examples of new brick work were found in the rounds among them being the New Cumberland Hotel at Middlesboro, and the new Manring Theatre at Middlesboro, which cost \$300,000 and included the use of some nice terra cotta as well as brick.

THE BOOK OF SMILES.

According to the current "Book of Smiles," "An expert is a man who knows nothing else." We are tempted to add—"and sometimes not that." The closing stanza reads: "The world is full of willing people—most of them willing to watch the other fellow work."

In between these bits of philosophy are some chunks of wisdom about drying brick and tile. For instance, it says: "Push your present dryer harder. Get more brick per day," and then tells how and offers further information, free to those who seek. See ad on page 124.

One of the rhythmic gems in the book is headed:

The Good Old Summer Time.

"We have boiled the hydrant water—
We have sterilized the milk;
We have strained the prowling microbe
Through the finest kind of silk;
We have bought and we have borrowed
Every patent health device,
And now the doctors tell us
WE HAVE GOT TO BOIL THE ICE!"

JUST COMMON BRICK.

Under the above title the Lancaster (Pa.) Brick Company has issued an exceedingly attractive booklet, profusely illustrated with views of several brick homes and other buildings constructed of common brick. The prelude reads:

Just Common Brick.

I am Common Brick.

My origin is veiled in the dim ages of antiquity.

I formed the massive walls that encircled old Babylon and ornamented the Hanging Gardens of Nebuchadnezzar.

The Egyptians used me to build their most sacred shrines. The Romans knew and venerated me.

Down through the centuries of recorded time, I have been utilized wherever Permanence was sought.

As soon as the hardy pioneers reached the shores of America, they made use of me to build their homes.

Today I am known the world around as the matchless building material.

I make the lofty office building, the gigantic industrial plant, the stately mansion and the cosy cottage.

I am the protector of humanity, the defender of family life, the cornerstone of the Home.

I am Common Brick.

We presume a copy may be had for the asking. Address The Lancaster Brick Company, Lancaster, Pa.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 80. August, 1923. No. 2.

CURRENT COMMENT.

Now for a start for a big fall business.

* * *

Keep the kilns burning and the brick moving.

* * *

Do not let political pot boiling interfere with the work of kiln burning.

* * *

If legitimate business could get money as easily as wild cat schemes there would be better times for all of us.

* * *

The face brick development of the year shows a splendid range of color effects with texture work still a favorite.

* * *

Brick sales and prices sagged a little with the heat in mid-summer but there is more confidence at this writing.

* * *

The man who has not made money in the brick business so far this year has been running in mighty tough luck.

* * *

There is a little relief noticeable in the help shortage matter for clayworking plants.

* * *

Cutting prices to get business is poor salesmanship. Cost plus a fair margin of profit should be the determining factor in price making and salesmanship should hold on to the profit.

* * *

There have been more brick veneer jobs this year than ever before, a fact that offers some interesting food for thought.

New ideas and devices for speeding up the work of bricklaying are just as important in their way as to have more bricklayers.

* * *

The best all around solution of the shortage of help problem is in the use of more mechanical devices for the handling of clay and brick.

* * *

Things which shorten the time of burning and the time of cooling down kilns furnish immediate help in speeding up the work these days.

* * *

Push the sale and shipment of prospective jobs that the builder may have the brick on hand before heavy traffic congests the railroads this fall.

* * *

Get the retail dealers interested in your product and you will get worthwhile representation in each community that will mean future business.

* * *

Face brick salesmanship has become something of an art in which there are other factors involved besides that of finding prospective customers.

* * *

Where you find care exercised in loading and shipping there you also find a good list of satisfied customers and a short list of complaints and claims.

* * *

The cement folks have made good advertising matter out of the story of how their product is made. There is more than a hint in this for the clayworking industry.

* * *

Don't be afraid of getting a little surplus stock ahead this fall. Remember that building went along fairly well all last winter and those with stock on hand made it pay.

* * *

This is a year in which the sturdiness and practical common sense of the man on the job at the burning end has weighed heavy in the matter of keeping things going.

* * *

It looks like a real car shortage coming, and that the clay products industry will be among the first to feel the effects of it. So push the acceptance and delivery of orders while the shipping is good.

* * *

Good wages for bricklayers is helping to bring more apprentices to bricklaying schools with promise that in another year we will have a bigger army of bricklayers and can carry on more aggressively.

THE BUILDING RECORD.

A study of the first six months of the building record of this year and a comparison of it with the same period in previous years is impressive of two important facts. One is that the volume of building steadily and persistently increases with the growth in population and the wider spread of industry and business. The other is that the actual fluctuation between what we term good periods and bad are not so wide as we are given to believe. Most of the differences in the value totals between one year and another are made up of variations in prices of material and difference in wages, and the impressive thing about the whole record, when one studies analytically the building returns for a number of years, is that there is a persistent and more or less steady increase in the volume of building requirements. And this is about the most cheerful thing we could get out of the building record when speculating on the future because it

points plainly toward the fact that notwithstanding what we term high and low tides in building activity the work goes on persistently and steadily increases in volume as the years roll by.

TOO MUCH ORGANIZING.

Thomas R. Marshall, former Vice President of the United States, recently devoted one of his pithy newspaper articles to a review of the steady and persistent growth of organization until it has become a fad and something of a nuisance. There are so many different urges to organize that the public is worn out with the subject and is inclined to react unfavorably. He sets forth in some detail some well known facts about many organizations being essential to the welfare of business, and many others having good aims but not enough work or possible accomplishment before them to justify their existence and upkeep, and suggests close scrutiny and some shaking down of organization ideas that we may weed out what are unnecessary and thus be able to get better results out of fewer organizations well handled and properly co-operated in by the members.

BRICK SHIPPING WEIGHTS.

Whatever your freight rate may be the specific amount you must pay on a rail shipment of brick depends upon weight. And sometimes weights may vary because of difficulties of properly weighing cars hooked up in trains moving over a railway scale. For this reason and for better convenience and more positiveness there is a method by which brick manufacturers can establish a standard weight for brick so that the number of brick on the invoice becomes a basis for figuring out the weight. The method of procedure is to have your railway station agent make request through the proper channels for an inspector of weights and measures in your shipping territory to come and make weight tests of your brick. He should then come and carefully weigh a series of your regular products and from these give you an official weight per brick and an official listing which you can make the basis for your shipping weights thus putting the matter of brick shipping weights on a positive basis and relieving it from uncertainty and claims and contentions.

THE BIG BRICK STATES.

The detailed report of the United States Geological Survey on the clayworking industries for 1920 furnishes an interesting study in the rank of states. There are clayworking plants in every state but some states still stand out conspicuously in the production of brick and other clay products. In this tabulation to show the production by states two classifications are made. One showing the total of brick and tile, and the other showing pottery.

Ohio is the state that stands out in first rank when we count all the clayworking industries, with a total for 1920 of \$82,061,960. It is Pennsylvania, however, that leads in brick and tile production though it is second to Ohio in total of brick and tile and pottery. The brick and tile production of Pennsylvania runs \$45,369,339 against Ohio with brick and tile of \$40,832,157. Ohio has a showing in pottery actually in excess of the showing of brick and tile which swell its total up to first place. Illinois comes third in the brick and tile list and fourth in the general list of clay producing states, the brick and tile total for Illinois being \$23,187,613. Next comes Missouri with a total in the brick and tile column of \$17,443,458, followed by New Jersey with \$15,423,652

in the brick and tile column. And New Jersey runs above 40 million in pottery so that it ranks third in the states of total production, being ahead of Illinois on this but behind Illinois in brick and tile. Next comes Indiana, New York and Iowa each showing up with more than 10 million in brick and tile, and West Virginia passing this total, too, but mainly by virtue of pottery, while California goes over the 10 million mark with the help of pottery, though brick and tile constitute the main items in the California production. There are all told 10 states which show clay products above the 10 million dollar mark in 1920, and 3 which go above 40 million, the 3 being in the order named Ohio, Pennsylvania and New Jersey. The total of all states for the year in clay products is given as \$373,675,102, which is an increase of 35.7 per cent in value over 1919.

THE BRICKLAYER AND THE WAGE TREND.

Commenting upon the two year contract made by the bricklayers' unions in New York on the basis of \$1.50 an hour, the Financial Age points that it creates an interesting situation with the wage trend which no one can tell where or how it will end. The point is made that this high rate obtained by bricklayers will carry with it a demand for higher wages by carpenters, plasterers and plumbers and all others engaged in the building industries, and if this is followed by restrictions as to quantity of work being done it will eventually reach a point where it becomes intolerable and bring on a widespread depression in the building industries.

There are two points made in the review of the wage trend in this relation which are worthy of special attention right now. The first is that the additional cost of bulding does not stop at the higher wages required by bricklayers. The contention is that high wages to them means that other skilled workers will insist upon higher wages, so that the real addition to the cost of bulding as a result is several times the additional wages received by bricklayers. The other point is a questioning of the real skill of bricklaying and the time required to learn it. There is some contention here that the bricklayer has not done anything to entitle himself to progressive advances in his wages. That is, he has neither brought labor-saving devices into play or increased his own productive capacity in the work, and further that it is not such a difficult matter to acquire the necessary skill to be termed a bricklayer.

On this point there are some other interesting reports come to hand. One that reaches us through the channels of bulletins sent out by the Hollow Building Tile Association tells us that schools for masons are springing up rapidly in all sections of the country, and that San Francisco, St. Paul and Minneapolis have begun schools by funds raised by public subscription among contractors and others interested in the building trades. This report indicates that it is practical to train men in the work of bricklaying in the course of six months and that this has been proved a success. The announced success here seems to bear out the contention in the final review that there is no great difficulty in learning to be a good bricklayer. This in turn points to the idea that with enough interest and effort it will be practical to train in the course of the next year or two sufficient bricklayers to carry on and to extend the use of brick and hollow building tile in the structural industries much more than at the present time.

The final answer will either be more men trained in this calling to bring the cost of bricklaying and other structural labor down to a reasonable basis, or the other alternative of a buyers' strike and dull times in the building industries. Is there any room for question as to which side we should take here, or of it being to the material interest and the future welfare of the clayworking industry for us to render active encouragement and support to efforts being put forth by specific schools for training bricklayers?

SEWER PIPE.

THE FINAL AND REVISED figures on sewer pipe production in 1920 shows a total value of \$25,171,015. Even allowing for the inflated values of 1920 this is a good showing and is practically double the production of ten years prior to that. And plainly this doubling is the result of natural growth and the more extended use of sewer pipe in the smaller cities and towns in the country districts. The signs of the time point toward an even more rapid growth in the future, too, because developments are going on in the dealer trade hook-up which bespeak a greater volume of future business. And if the signs read right there is a big future before the sewer pipe division of the clayworking industry. If nothing happens to interfere with progress the sewer pipe total should attain 50 million by 1925.

THE DOLLINGS FAILURES.

THE PATH of those who indulge in high financing is strewn with pitfalls, and failure, instead of success, is apt to be their lot. Worse than that the thrifty citizen who, lured by the promise of large returns, invests his or her savings in these stocks all too often finds that loss and not profit is his share. Such it seems is the fate of those who have invested in the Dollings companies, now in the hands of receivers.

On the witness stand recently, Mr. Dollings, according to newspaper reports, stated he was a millionaire a few years ago, but now he finds himself a bankrupt. If he alone suffered that fate there would be little need for sympathy, but unfortunately the burden of failure falls heavily upon those who have put their life savings into Dollings stock.

The Indiana receiver, Bert S. McBride, predicts that with careful management the stockholders may realize a substantial return on their investment. It is hoped he is a wise prophet. It probably will come true of the Anderson Foundry and Machine Company, for its affairs have been placed in the hands of W. T. Durbin, and under his direction the business may again be made successful as it was under his management in years gone by. When the Dollings Company took over the company Mr. Durbin retired, but is now called back into active service with the hope that the firm may meet its obligations in full. It has a record of many years of successful operation.

R. C. Burton Appointed Custodian for the Burton-Townsend Company by the Receivers.

For some years past the Burton-Townsend Company has been operated by the Dollings Company, Mr. R. C. Burton retiring from active management or connection with the firm. Now that, with the other Dollings concerns, it is in the hands of receivers, Mr. Burton has been appointed custodian by the receivers and is again giving his time and talents to the operation of the plant. He writes they are running to capacity, with orders on their books sufficient to keep them busy for some months to come.

REFRACTORIES NEWS AND OPERATIONS.

THE CO-OPERATIVE agreement between the Refractories Manufacturers Association and the U. S. Bureau of Mines will terminate in October, when the list of plants will have been covered. Beginning the first week in September, the laboratory car and crew will be at the Ottawa (Ill.) plant of the Chicago Retort and Fire Brick Company and from there the car will be sent back to Pittsburgh. A full report of the investigation, which will cover the burning of silica, chrome

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and magnesite brick as well as practically all grades of clay fire brick, will be published in The Clay-Worker as soon as it is released by the government.

LACLEDE-CHRISTY'S motion picture film, made in cooperation with the Bureau of Mines, will be shown at the meeting of the Refractories Manufacturers Association, which will be held at the Broadmoor Hotel, Colorado Springs, Colo., on September 11th and 12th. Invitations to attend this meeting have been issued to all manufacturers of refractories operating plants in this country and acceptances have been received from a large number of non-members. This meeting promises to be the largest, from point of attendance, ever held by the R. M. A.

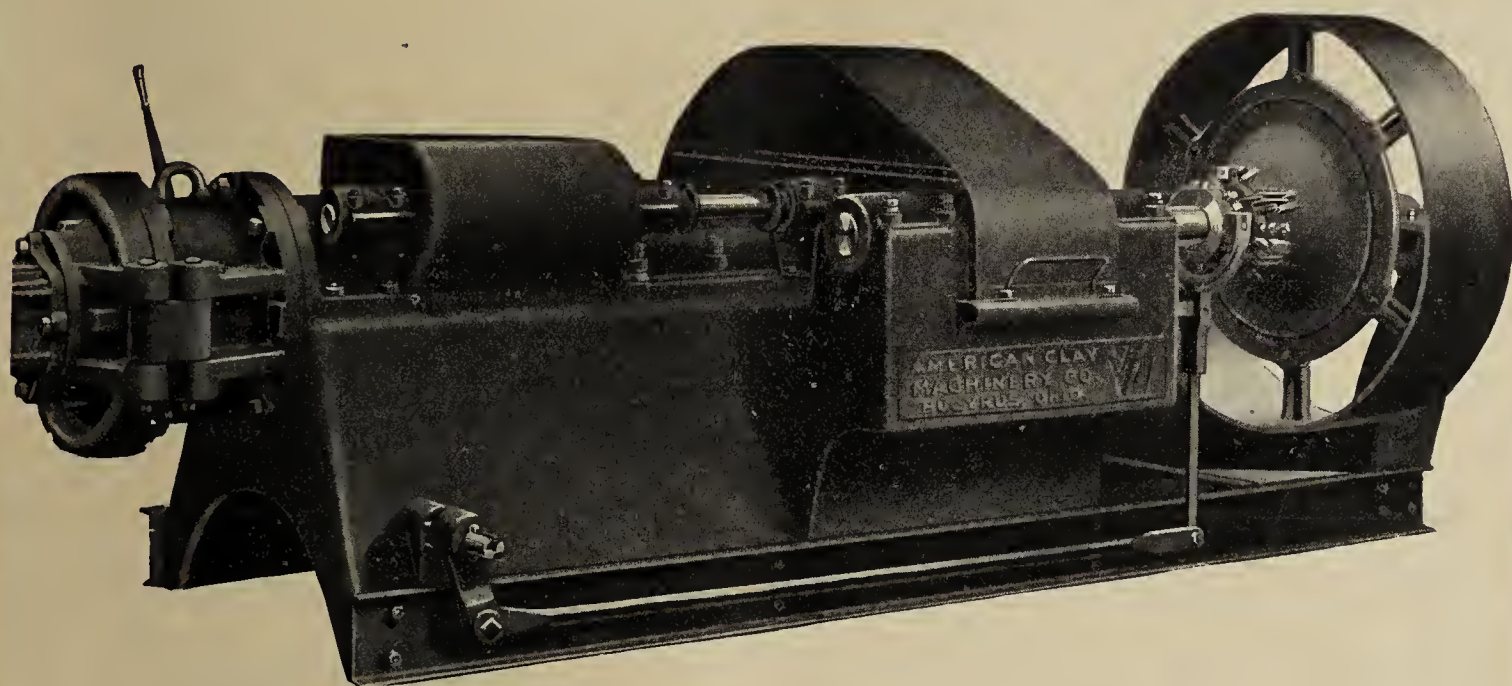
THE ROCK ISLAND lines have assigned the Refractories Manufacturers Association a private Pullman car from Chicago to Colorado Springs, the party being scheduled to leave Chicago at 10:00 A. M., Sunday, September 9th. The Pennsylvania System has made a similar reservation from Pittsburgh to Chicago on the train leaving Pittsburgh at 9:00 P. M. Saturday, the 8th.

PURINGTON PAVING BRICK CO. TAKES OVER BARR CLAY CO.

As briefly announced in the last issue of The Clay-Worker, the final details have been completed in the merger of the Purington Paving Brick Company, of Galesburgh, Ill., and the Barr Clay Company, of Streator, Ill., which makes the Purington Company the largest manufacturers of paving brick west of Chicago. Mr. C. C. Barr, president of the Barr Clay Company, while retaining stock in the company, will retire from active interest in the Streator Company. The Purington Paving Brick Company has increased its capital stock to \$500,000 of preferred stock and \$2,000,000 common stock. The officers of the Purington Company are: President, F. G. Mateson; Vice President, O. N. Custer; Secretary, W. H. Terwilliger; Directors, F. G. Matteson, O. N. Custer, W. E. Phillips, W. H. Pankey, George C. Gale and P. F. McCarthy.

290

Four American No. 290 Auger Machines were among other "Americans" put in the Bradford, Pa., Brick Co. Plant. One machine was an extra to use when one of the others go wrong. After some years they decided to sell the extra 290. The three others refused to go wrong. Quality in the 290 keeps it going satisfactorily.



302

Among other American Machines in the Los Angeles Pressed Brick Co. Plant was a 302 American Pug Mill. Superintendent Cake said of this machine—"We are very much pleased with the high class of work performed by the American line of machinery as well as the simplicity of its mechanism." Quality built in to American Machines shows in their operation.



The Hadfield-Penfield Steel Co., Bucyrus, Ohio

Builders of "The American Line."

SCHOOL CHILDREN WRITE PRIZE WINNING ESSAYS.

DURING the spring, Hubert Somers, manager of the Somers Brick Company, Atlantic City, received a request from the principal of a school near the plant for the privilege of allowing the pupils of a class to go through the plant. Mr. Somers readily granted the request, and then in order to stimulate the interest of the class in the manufacture of the best building material on earth offered prizes for the best articles or essay written by the pupils. Much to Mr. Somers' surprise when the class arrived at the plant, it was a Third Grade class, but the youngsters appeared to take in everything, and when the essays were submitted, Mr. Somers had another surprise.

The prize winning essays were so good considering the age of the children, he has submitted them, and we are pleased to reproduce both articles which were written by children ten years old. We leave it to the reader to pass on their merit.

HOW BRICKS ARE MADE.

By Raymond Chaufournier, Grade 3.

The bricks are made of clay. They have to dig three feet before they reach the clay. When they reach the clay they take a crane to load the cars. These cars run on tracks. A locomotive pulls the cars up to the foot of the hill. There they have a rope called a cable. This cable pulls the cars into the mill.

When the clay is in the mill they unload the cars. They put the clay in a machine. This machine crushes it to powder. Then they put clay in another machine. There are revolving iron knives. These knives mix the clay with water. When that is done the machine puts the clay in the molds. The molds go around in the machine. At the bottom there's a pile of sand and when the molds go around they take the sand, part of the sand falls out and the rest sticks to the sides.

They have to use the sand so that the clay don't stick to the sides of the molds. As the molds go around they put the brick on a board. The board rolls down and a man takes the board and the bricks and loads the cars. When the man puts the boards ready for the molds to put the bricks there's a hammer that hits the molds to loosen the bricks. When the cars are loaded they take the bricks to the drying shed.

In the drying shed they leave a space between the bricks so that the heat can go through. One drying shed can hold sixteen thousand bricks at a time. They heat the drying shed with a whole lot of steam pipes. There's a big fan that fans the heat off the pipes through a big pipe that goes under the ground to the drying shed. The heat comes up through the grates. That dries the bricks. It takes two days to dry the bricks. Then they take the bricks to the kilns. They pile the bricks like a tent over the grates in the ground. When the kilns are full they close the end that's open and make a fire under the kilns. It takes nine days to fire the bricks, nine days longer to cool. Then they are ready to ship. The bricks have to be fired to make them hard. After they are fired they are red.

HOW BRICKS ARE MADE.

By Marolyn Green, Grade 3.

The bricks are made of clay. They get the clay from under the ground. They dig about three feet to take the sand off then they take the clay. They take it up in the mill. It gets crushed to powder. It is mixed with revolving knives. The clay is pressed into the molds by machinery. Then they take the bricks up to the drying sheds. They pile the bricks up in such a way as to leave spaces between them, which allows the heat to circulate freely. They are heated with pipes and they go under the ground. On the ground is like holes. When they put the bricks in the oven the heat carries off the moisture. It takes about two or three days to dry the bricks. A kiln looks like a large garage with one side open. They take the bricks from the drying shed and put them in the kilns. The fire is in another room and it comes under the ground. It takes about nine or ten days to fire the bricks.

A kiln holds about 300,000 bricks. They fire the bricks to get them hard so they won't break. After the bricks are fired they are red. They ship them away in trucks and cars and sell them.

NEW OMAHA BRICK DISTRIBUTING COMPANY.

An announcement of unusual interest has been received from the Advance Brick Company, Omaha, Nebraska, telling of the organization of that firm by J. L. Buckley, formerly of Des Moines, Iowa, and R. W. Besley, of Council Bluffs, and Omaha. Both men have had a wide experience in the manufacture and sale of brick and building tile, as well as in construction work. The general office and display room of the company will be at 1721 Dodge Street, Omaha. They are exclusive distributors of the face brick manufactured by the Capital Clay Company of Des Moines and the Tri-City Brick Company of Rock Island and will carry an extremely high grade face brick and block, also a complete line of load bearing tile, common brick, fire brick, in fact everything in the clay product line. Knowing both Mr. Buckley and Mr. Besley, we predict much success for the new company.

UTAH BRICK COMPANY EMPLOYEES ENJOY PICNIC.

Most of the brick manufacturers of Utah gathered with the employes of the Salt Lake Pressed Brick Company in an all-day picnic August 11, at Saratoga Springs, a little summer resort on Utah Lake not far from Salt Lake City. Invitations were issued by the employes of the Salt Lake Pressed Brick Company to the employes of the Provo Brick & Tile Company, at Provo, while the company issued invitations to the brick manufacturers throughout the state and nearly everyone who had ever worked for the company, and needless to say most of the invitations were accepted. The Provo employes wrote a little song for the occasion, as follows:

"It's a long way to Saratoga,
It's a fine place to go,
We are glad to be invited
To meet the bunch we want to know,
So-long old Provo,
Good-bye work and care.
We're on the road to Saratoga
And hope to see you all there."

One of the invitations came as far east as Indianapolis, and only the great distance prevented an acceptance.

TERAA COTTA FIRMS FINED.

Six terra cotta manufacturing concerns, charged with violations of the Sherman anti-trust act, entered pleas of guilty August 4 before Federal Judge Cliffe and fines ranging from \$1,500 to \$3,000 each were imposed. The firms are located in Chicago, St. Louis, Kansas City and Denver.

NEW YORK FIRM INVESTIGATING TUNNEL DRYERS.

The Empire Brick & Supply Company, with head offices in New York City, and plants on the Hudson River, write that while they have heretofore dried their brick by natural air with open covered racks, they are now investigating the advisability of installing tunnel dryers.

NEW DISTRICT MANAGER FOR CLEVELAND CONCERN.

George S. Davies, formerly associated with the Dover Fire Brick Company and the Hydraulic Press Brick Company, and the Harbison-Walker Refractories Company, of Cleveland, has been appointed district manager for the Ashland Fire Brick Company, with offices at 1252 East Fifty-fifth Street, Cleveland. The Ashland line has a favorable reputation in that district, and Mr. Davies writes it is his plan to give their customers better personal service, being equipped to supply anything needed from their new warehouse at the above address.

THERE IS A REASON WHY!

WILLIAM CONWAY, Philadelphia

Built a Haigh Kiln in 1907 and it has run continuously ever since. Mr. Conway had to get rid of the smoke nuisance or move his plant. The Haigh Kiln burned the smoke. He had other reasons. Ask him WHY?

Mr. McMILLAN, Milledgeville, Ga.

Built a Haigh Kiln in 1908 and the fires have never been out. Mr. McMillan wanted to save fuel and the Haigh does it. There are other reasons. Ask Mr. McMillan WHY?

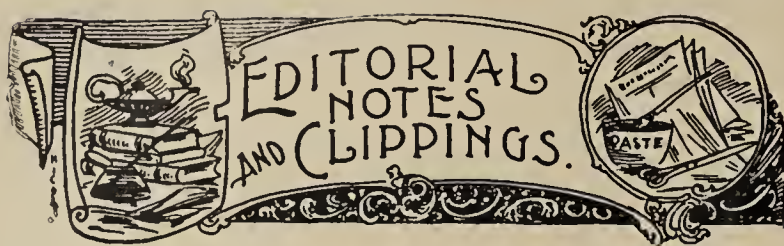
Mr. PONSLER, Iola, Kansas

Built a Haigh Kiln in 1913 and it has been successfully operated ever since. Mr. Ponsler had to get a substitute for natural gas burning and he selected the Haigh Kiln to his satisfaction. Mr. Ponsler has other reasons. Ask him WHY?

There is a reason "WHY" every Clayworker can use the Haigh Kiln to his satisfaction and Profit. We can refer you to a hundred users who can tell you WHY.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio

Builders of "The American Line."



EDITORIAL NOTES AND CLIPPINGS.

The Goodwyn Crockery Company of Memphis, Tenn., has increased its capital from \$125,000 to \$200,000.

The Poston Brick Company, of Crawfordsville, Ind., is running full force and filling orders for over 2,000,000 brick.

The Atlas Clay Products Company of Madisonville, Ky., has been incorporated by E. H. Pennick, N. M. Mitchell and A. F. Fox.

L. A. Wilson of Newberry, S. C., is reported to be contemplating the erection of a \$50,000 brick plant in Newberry County, S. C.

The Phoenix Brick and Tile Company of Dallas, Tex., has been incorporated with a capital of \$40,000. The incorporators are C. W. Martin, H. E. Spafford and P. S. Russell.

The Louisville Kiln Drying Company has been incorporated at Louisville, Ky., with a capital of \$20,000. The incorporators are A. E. Norman, Jr., R. A. Rood and L. L. Wehner.

The Elk River Clay Products Company of 1137 Calvert Building, Baltimore, Md., has been chartered by Frank Roland Hansell, John Vernon Pimm and Francis Leonard Schmidt with a capital of \$30,000.

The Interlock Brick and Tile Mounting Company of Dayton, Ky., has been incorporated by W. F. Hoffman and Henry Fahreholtz, of Dayton, Alonzo V. Gray, of Covington, and John Martin, of Newport.

F. P. Kennison, receiver for the Clay Products Manufacturing Company, Monroeville, Ohio, has three clayworking plants which can be purchased at a bargain. All three are located in the northern part of Ohio.

Indications at Bland, Mo., are that many new clay pits will be opened in the field near that city. Clay hauling just now is assuming large proportions in the town and three carloads of flint and rough and burley clay are shipped every day.

The Big Stone Gap Brick and Tile Company of Big Stone Gap, Va., which was recently noted as having been incorporated with a capital stock of \$100,000, will soon begin the construction of a brick plant. W. W. Taylor is president of the corporation.

C. L. Archer is at the head of a new company recently formed at Corinth, Miss., to manufacture common and face brick. The new plant is to be equipped with the most modern machinery for making brick and will have a capacity of 6,000,000 brick per year.

The Progressive Ceramics of Warwood, W. Va., has let the contract for the erection of a plant that is to cost \$10,000 to Stanley Beall, a Warwood contractor. The company will manufacture hand decorated art tiles with a weekly capacity of 20,000 pieces. The company announces that it is in the market for machinery, including tile bisque.

After laying idle for nearly ten years the brickyard at Rushton, Wash., has been purchased by the recently organized Tacoma Brick Company, of Tacoma, Wash. Some of the buildings were burned just prior to closing down the plant, and these will be rebuilt and the entire plant rebuilt and equipped with up-to-date machinery. John Buffelen is at the head of the company and will have associated with him J. H.

Bertkey, formerly connected with the old concern, who will have the active management of the plant.

Harry J. Nicholas will establish a clay products and brick plant at Thirty-third street in Kansas City, Mo.

Monroe Miller, of Birmingham, Ala., has let the contract for the erection of an addition to his pottery plant to T. F. Deese.

The Brigden Brick and Tile Company's plant at Brigden, Ontario, Canada, has been taken over by the Ontario Farmers Drainage Co., of which Andrew Hicks is president.

The Center Junction Brick and Tile Company contemplates moving its plant from Center Junction, Iowa, to Anamosa, that state where they have located a fine bed of clay.

Taylor Jackson, manager of the Dallas Pottery Company at Dallas, Tex., has announced that the company will soon begin the construction of a \$75,000 pottery plant at Love Field.

E. P. Miller has purchased one-half of the interest of S. B. Sieg in the Sieg Brick and Tile Company at Marshalltown, Iowa. The company has been reorganized with Mr. Miller as president and H. E. Fesler vice president and manager.

A new concern has been formed at Decatur, Ill., known as the Decatur China, Terra Cotta and Tile Manufacturing Co. Five acres of ground have been leased and a plant will at once be erected. Johannes Schumacher is at the head of the enterprise.

The Lockard Brick Works at Meridan, Miss., which is owned by M. N. Lockard, will be rebuilt at once. The plant was destroyed by fire recently with a reported loss of \$50,000. The plant will need a brick drier and stiff mud brick machinery of 30,000 daily capacity.

F. A. Millican, of the Jefferson Hotel, Spokane, Wash., writes he has for sale at a bargain an almost complete sand-lime brick plant of which he wishes to dispose, either as a whole or will sell the machinery piece by piece. Parties interested in machinery of this sort will do well to communicate with Mr. Millican direct.

The Eastern Sewer Pipe and Brick Company, with a capital of \$350,000, has been incorporated at Martinsburg, W. Va. F. Vernon Aler of Martinsburg, is president of the company, and Martin J. Beach of the Calvert Building, Baltimore, Md., is secretary of the company. The company will manufacture sewer pipe, hollow tile, building and paving brick.

The Builders Brick Company of New Haven, Conn., has taken over the old brickyard at Laurel on the Connecticut River and will put same in shape for operation. The plant will have a daily capacity of 30,000 brick. John O. Shares, of Hamden, Conn., is president of the company, William C. Perkins, treasurer, and Charles W. Watson production manager.

The Murray brickyards at Clayton Crossing, Newington, Conn., have been bought by John H. Connelly of New Britain, from the Richard Murray estate, for approximately \$50,000. The yards include twenty-seven acres of clay land, a new dry kiln installed at a cost of about \$40,000, office buildings, two houses, a brick boiler house and a railroad shed. The new owner intends to operate the plant.

The Boulder (Colo.) Brick Company has received an order for 1,500,000 bricks to be delivered at Laramie, Wyo., for use in the construction of a new freight depot for the Union Pacific railroad. The order insures capacity production of the plant for several months to come and an additional shift of workmen will be employed at once, according to Manager J. A. Wachob. The present production of the plant is 20,000 bricks a day. With another shift employed, 40,000 will be

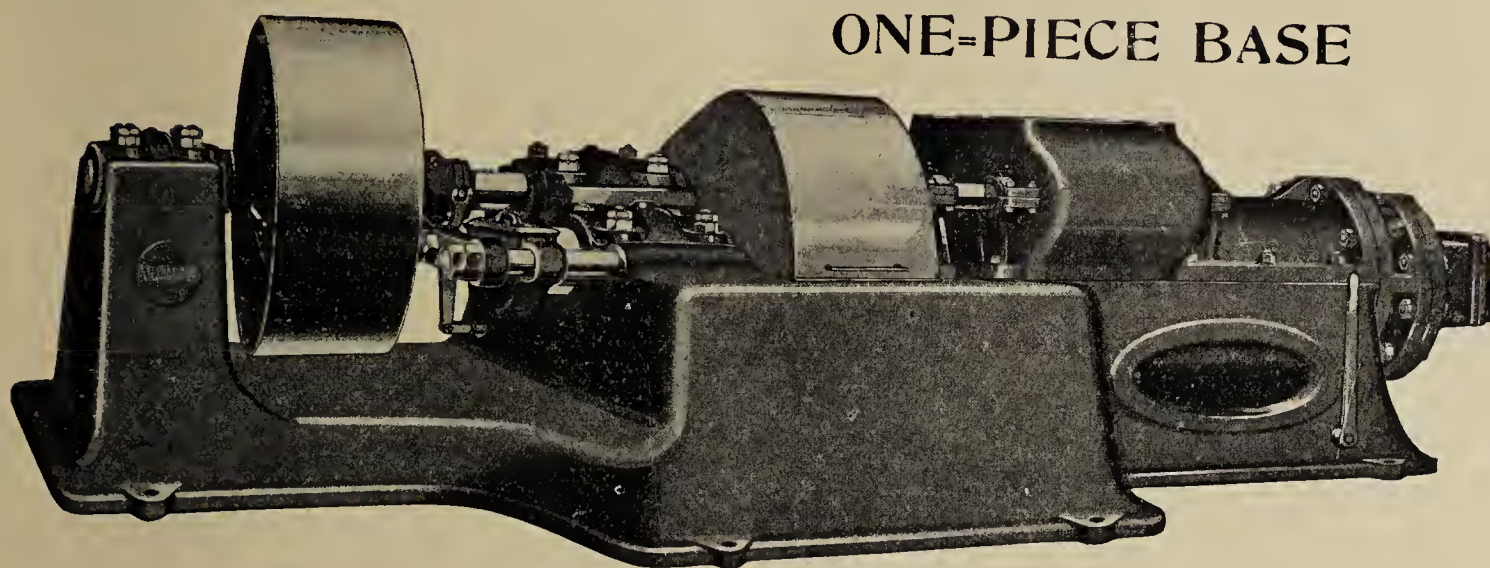
(Continued on Page 178)

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ONE-PIECE BASE



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DRYERS

METALLIC RADIATION
WASTE HEAT



“More Radiation per foot of Tunnel.”

Ask for Bulletin No. 40

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Mention THE CLAY-WORKER

EDITORIAL NOTES AND CLIPPINGS.

(Continued from Page 176)

produced. A kiln containing 60,000 brick is now being burned and will go toward filling the order.

The Hampton Brick and Tile Co., Hampton, Iowa, contemplates the erection of a one story plant at an estimated cost of \$75,000.

At a recent meeting of the stockholders of the Pennsylvania Clay Products Company, of Butler, Pa., it was voted to increase the capital stock of the company to \$100,000.

The Valley Cities Brick Company, Youngstown, Ohio, capital \$5,000, has been organized by David G. Jenkins, N. T. Hurd, Harry J. Williams, Howard Zellers and Frank Silver.

The machinery building of the Algona Brick and Tile Works at Algona, Iowa, was destroyed by fire August 1, causing a loss of about \$17,000, partly covered by insurance. The plant had not been in operation this season and it is not likely the plant will be rebuilt.

The Seven Veins Coal Company, Missoula, Mont., of which W. R. Glasscock is general manager, announces they will build a brick manufacturing plant in order to develop a fine deposit of shale which has been discovered on the property of the company. They will of course be modern throughout, and will have an initial capacity of 40,000 brick per day.

The Clay Products Co., of Fullerton, California, will construct an \$85,000 tile factory near that town which they hope to have in operation by the first of October. George R. Whitcomb is the head of the company, and announced the construction of the factory will be under the management of Charles W. Parks, an able ceramic engineer, a graduate of the Ohio State University.

L. E. Hunter, president of the Pawhuska Brick and Tile Manufacturing Co., Pawhuska, Okla., never loses an opportunity to boost burned clay products. He recently addressed the Rotary Club of his town on the subject. Mr. Hunter's company is turning out 40,000 brick per day, and in addition to a good local demand, they are shipping to points in Oklahoma, Nebraska, Texas, Louisiana, Mississippi and Kansas.

The First National Bank of David City, Neb., has purchased the land, buildings, machinery and other assets of the Table Rock Brick and Material Company at public sale in Pawnee City, Neb. The property was bid in for \$14,000. The Table Rock Brick and Material Company was one of the largest commercial and manufacturing concerns in this section of the state and the largest manufacturing concern in Pawnee County.

Albert White has purchased the plant of the Iliff Brick and Tile Plant, located at Iliff, Colo., which was built three years ago, and which has been idle for two years, and will put it in shape for operation at once, adding a dryer to the equipment. Mr. White will have charge of the business management of the enterprise and has associated with him three experienced brick manufacturers. They will manufacture drain tile as well as building brick.

The Dallas Pottery has been incorporated by L. F. McKamy, Edwin Doggett, Cary Jackson, F. W. Jackson, Dr. O. P. Mitchell and George L. McLendon, all of Dallas, Tex., with a capital stock of \$75,000. This company has recently purchased seven and one-half acres in the Love field industrial district, near the property of the Dallas Textile Mills, on which there are three large buildings formerly used as government warehouses. These buildings will be used to house the machinery of a new pottery plant which will be erected

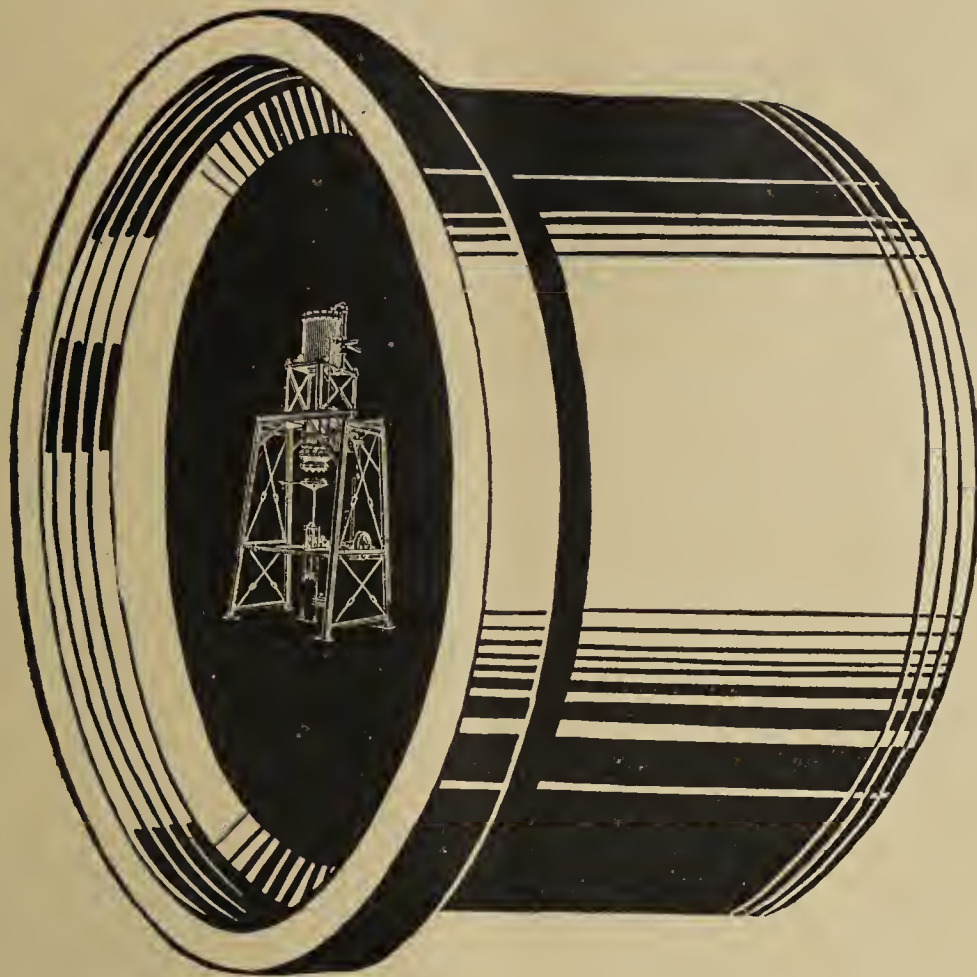
at once. Machinery for a complete new plant has been ordered and a portion of it has already arrived and will be installed immediately.

Plans for increasing the output at the state brick plant at Junction City, O., to meet the demands of various state institutions are under consideration, it was announced recently at the state welfare department. Director Harper visited the plant at Junction City to discuss with the superintendent the feasibility of building more kilns. It is estimated by officials of the welfare department that the state could use 100,000 bricks a day during the present nice weather.

Organization of the Ferris Brick Company with a capitalization of \$500,000 has been announced in Ferris, Texas. W. E. Weatherford is president. The new organization includes the original plants of the Ferris Pressed Brick Company, the Lone Star Pressed Brick Company, the Globe Pressed Brick Company, the Diamond Brick Company, the Cole Pressed Brick Company, and the Kookan Press Brick Company, all located at Ferris. Other officers of the company are: E. T. Cole, vice president; Van Johnson, manager; J. A. Carpenter, secretary-treasurer. Organization of the company is the consummation of plans which were started several months ago and, according to President Weatherford, the merging of the plants brought about in order to effect economies in the manufacture of brick in this producing region.

The P. Bannon Pipe Company, Louisville, Ky., has started shipping material for the government hospital and four smaller buildings to be constructed at Dawson Springs, Ky., to add to the present governmental hospital there, according to the announcement of the head of the Bannon firm. This company has been having an enormous volume of business in recent months, and declaration is made that there are all indications for a big business in the latter part of this year and the first half at least of 1924. The Bannon Company at the present time is furnishing the hollow tile for the Brown Hotel and the new Elks' building. The company specializes in salt glazed sewer and culvert pipe. It also manufactures wall coping, farm drain tile, flue lining, chimney tops, hollow tile fire proofing, shale brick, fire brick, grate backs, etc., specializing also in Bannon's patent lidded pipe for steam conduits.

The Morey Clay Products Company, of Ottumwa, Iowa, which now ships approximately 50,000 tons of building brick and hollow building tile and drain tile a year, had its origin in 1888 when it was known as the Ottumwa Brick and Tile Co. and manufactured paving brick only. In 1890 D. A. Morey purchased two-thirds of the stock of the company and became a director and seven years later took charge of the plant as president and general manager. In 1903 he invented and constructed a continuous kiln so the plant could be operated the year through. Later on the name of the company was changed to the Morey Clay Products Company with a well equipped plant. When Mr. Morey died in 1920, J. G. Parks became president and general manager and has continued the same progressive policy of the company, increasing the output fifty per cent by providing additional drying facilities, new kilns and electrification, enabling the handling of both green and unburned ware more rapidly and in larger quantities. A system of milling and storing the clay, which makes possible capacity operation throughout the year, has also been installed. The plant has a capacity of 110,000 bricks a day in addition to face bricks, drain tile and burning tile. The drain tile has become an important factor in the business and is being used chiefly on farms and in federal aid road work.



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*Superior Equipment for Quality
and Quantity Production*

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Bulletins on Request

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



RECENT REPORT of the S. P. Brick and Tile Co. of Exeter, is a typical sample of the growth and success of the brick industry of California in the past few years. Organized in 1898 by L. E. Hays and W. D. Trewhitt, it was incorporated in 1920 with W. D. Trewhitt as president, L. E. Hays as vice-president and manager, and H. W. Shields as secretary. Ten acres has been added to the original ten acres of clay-bearing land, and the plant developed to a daily output of 60,000 brick. The plant is electrically equipped throughout, with one 150 h. p. boiler, two 50 h. p. boilers, two 30 h. p. boilers, and a 10 and 3 h. p. boiler. They have twelve tunnel dryers, each holding 17 cars. The heat is driven underneath these tunnels from immense auxiliary furnaces by means of two ten ft. fans. They have also arranged for the drying of 50,000 bricks in the open. While the artificially dried brick requires 48 hours, the air dried require 15 days in summer and six weeks in winter. The bricks are burned in clamp kilns containing 600,000 each. The burning is done by 36 oil burners, the oil being sprayed by steam under pressure of a 150 h. p. boiler. This makes even burning, though the brick be piled 14 ft. high. Six to nine days to burn and an equal number to cool, is their time schedule.

The bankruptcy of the Knowles Pottery Co. of Santa Clara is not so ominous as the newspaper headlines would make it appear. Irving Pomeroy, president of the company, explains that it is a legal expediency in no wise affecting the operation of the plant. It is desired to incorporate new capital from Oakland and San Francisco, and the legal proceedings are the quickest and surest method of putting things in shape to do so. As a matter of fact, the assets are three times the liabilities, the plant is operating full force, and market prospects are the best.

An interesting demonstration of the durability of brick as pavement material is shown on third street, in San Francisco. It is the oldest well-paved street in the city; having been laid at a time when the heavy horse-truck with steel tires was in vogue. It was properly laid, and the brick well burned. Just now there have been sections here and there torn up for the laying of pipes, conduits, etc., and the brick scarcely show the effect of the long years of the heaviest traffic in the city.

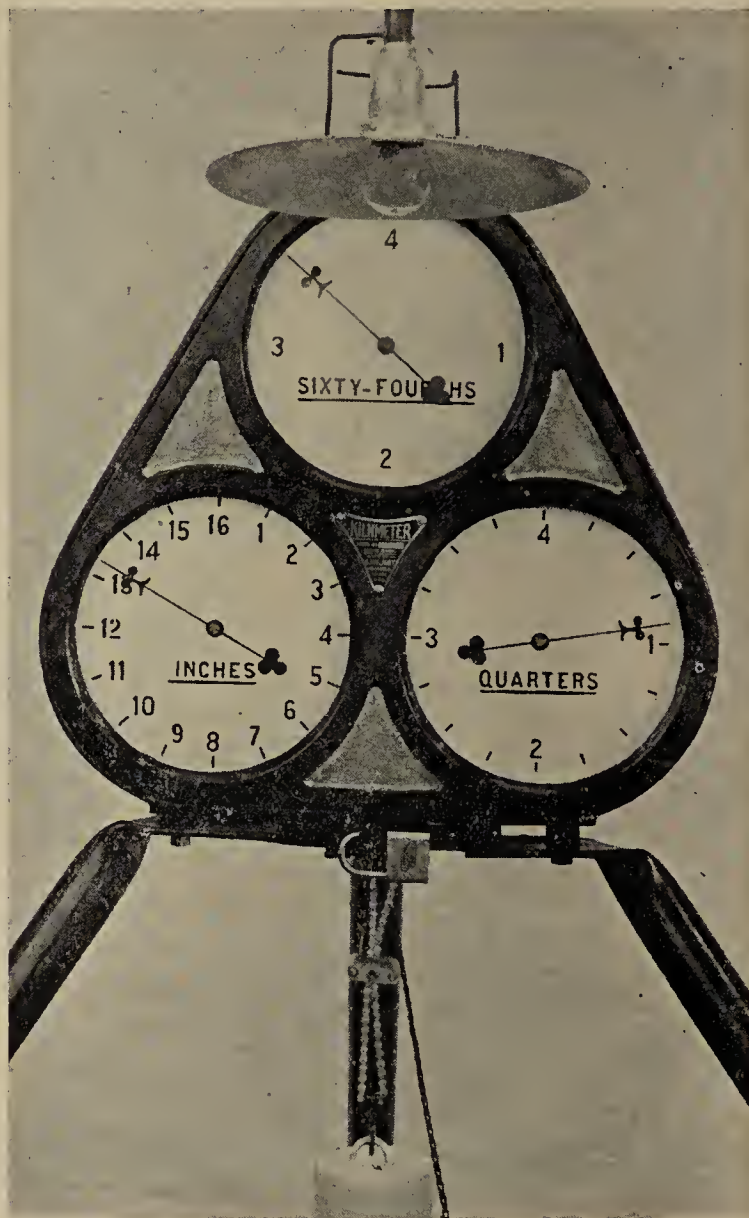
The U. S. Refractories Co. at San Luis Obispo is leveling ground for an additional dry ground. When the tracks are laid and the new equipment installed, it will double the working capacity of the plant.

The Steiger Brick Co. of Vallejo is making an aggressive campaign to sell more stock for enlarging capacity. They are endeavoring so far as possible to secure local subscriptions, for the benefit of the local interest which it will insure.

The Livermore Fire Brick Company are testing out a newly discovered deposit in the Tesla district that is promising well. If the tests continue favorable, it will give them a fine deposit close at home, and help reduce the cost of production.

E. Lazone of Alameda, and George Langley of Klau, have leased a quarry of diatomaceous earth at Bradley. They also have clay deposits on San Marcus creek. They have leased a large warehouse at San Miguel half way between the two, and will shortly install machinery for the making of clay products. The clay and the chalk rock will be hauled to the plant by truck. From the diatomaceous earth, they will manufacture

(Continued on Page 184)

WATCH YOUR
BRICK SETTLE

THE KILNMETER

(Patents Pending)

Greatest Clay Works Invention of the day. Enables you to observe the settlement of Burning Clay Wares to the one-thousandth part of an inch. Continuity of indication and record enables you to correct your firing factors—draft, coal feed, cleaning, firing term, to correctly meet your special yard conditions.

A remarkable time, labor and fuel saving device that insures economical, excellent and uniform burning of your product.

Let us tell you more about this Wonder Instrument.

Write today to

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436 W. Washington St.,

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AutoBrik Machine

At Atlantic
City



One Machine Paid For Out of Payroll Savings Does the Work of Two

The Somers Brick and Lumber Company had two old style soft mud machines. They seldom produced as high as 80,000 brick per day.

One day it was decided to install an AutoBrik Machine. Results have been as amazing as a fairy tale.

The average daily production on one AutoBrik Machine has been 78,000 AutoBrik and the AutoBrik Machine has paid for itself out of savings.

Before they bought, the Somers Brick and Lumber Company was not sure the AutoBrik Machine was necessary to their business—but they are so sure now that they would not be without it.

The same experience and the same result is waiting for all other manufacturers

who have not yet installed this greatest of Automatic Soft Mud Machines.

When are you going to cut payroll expense, eliminate hand bumping and dumping, increase production—and make a better product? Information regarding the AutoBrik Machine will be sent upon request.

LANCASTER IRON WORKS, Inc., Lancaster, Penna.

Brick Machinery Department,

James P. Martin, Manager

*Specialists in Completely Equipping Building Brick and Fire Brick
Plants for the Manufacture of Brick by the Soft Mud Process.*

THE BUSINESS TREND.

(Continued from Page 140)

what general opinion has prevailed that new construction has passed the crest, that high wages in the building trades had choked off the building boom and that a gradual let down would take place in the industry through the country.

The National City Bank, however, in its July bulletin, sets forth facts which are convincing that organization and construction work will continue for at least another year at or near capacity limits.

Construction work is the principal factor in boom times, according to this bulletin. It is pointed out that the most important fluctuations in industry are in the business of putting up new homes or other construction, or in the construction of equipment which goes into new structures, whether they happen to be dwellings, stores, factories, or bridges.

"The variation in this class of work is much greater than in the production of foodstuffs, wearing apparel and other goods that are quickly consumed," the current bulletin states. "A large proportion of the population is required on the average over a period of years in the industries that supply the new houses and furnishings, industrial equipment and public facilities of all kinds needed by our growing population and that result from the changes in tastes and customs.

"If this portion of the population could be steadily employed year in and year out, our industrial fluctuations would largely disappear, but this class of work does not have to be done with regularity, and, in fact, there are great variations in it which affect general prosperity. When construction work is in full swing, including the industries that supply the materials, we have full employment and the highest state of prosperity. When construction work falls off, not only is there unemployment in the trades directly affected, but a loss of purchasing power of their members that affects all the industries."

In answer to the question as to what extent this country had made good the deficiency in dwellings, office buildings, public buildings and other construction work which existed during the depression of 1921, the bulletin quotes Colonel Leonard P. Ayres, Vice President of the Cleveland Trust Company as saying after a study of returns from fifty of the largest cities that "the existing building shortage in these fifty cities is so great that building could continue at about 25 per cent above its normal activity for ten years before it would entirely make up the deficit."

A survey by the National City Bank agrees with the analysis of Colonel Ayres, and because of the existing shortage in new construction the bulletin suggests as extremely likely that the present period of prosperity will be prolonged. The present decline in figures for building permits is due primarily to an increase in wages of building trades employes, it is pointed out, which has resulted from the fact that labor is short as compared with the demand for workmen, and that contractors have been placed in the position of bidding against one another for bricklayers, plasterers and other classes of employes.

"Under the circumstances," says the bulletin, "the fact that building permits fall off and that contracts are not entered upon hardly can be taken as proof that construction work is going to be seriously reduced. There is proof, on the contrary, that the building campaign is nowhere near its end. It is being held up first of all by physical limitations. It is true that the rising costs may cause much of the work to be postponed indefinitely, but the fact that the buildings are wanted on a basis of costs prevailing prior to May 1 is a very definite element of strength in the situation.

"The fact that employers have granted wage advances since then is evidence that they believe there is a considerable amount of work that will go forward even under the new conditions. As the deficit in buildings is reduced, the urgency of the demand for more doubtless will be modified and the disposition to hold off for lower costs will be strengthened. Ultimately, the wage question will have to be dealt with again and there may be several set-tos on the subject before the deficit is fully overcome. However much there may be of this it seems safe to say there is no prospect of a decline in actual building activities in 1923."



Eagle Shale Planer at the Plant of the
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In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

Written for THE CLAY-WORKER.

THE NEW YORK SITUATION.



WORK OF A SPECULATIVE nature has begun to take on its seasonal decline in contemplated projects, while to offset this, enterprises of a commercial character have begun to ascend. Within the past fortnight there have been several new large operations for the larger city released. These involve a total expenditure well over three million dollars.

It is being admitted by the leading builders, however, that the largest part of the volume of new business is being withheld from the estimators, despite the easing off of labor difficulties and a more stable market. Those in the "know" are optimistic that if present conditions continue they will induce the moneyed interests to appear for investments.

There is a gradual and somewhat slow decline in speculative operations, which in turn will show a corresponding interest in skilled mechanics for the construction of the commercial and industrial enterprises now underway, and as this supply of labor increases, the possibilities of future demands for bonuses will disappear.

There seems to be a very decided improvement as a whole in the labor and material markets throughout this center. So much so, many of the leading builders have come forward recently and announced they are ready to give prospective investors a contract price on operations based on prevailing prices. Some are of the opinion that the tendency of some of the basic commodities to decline from their firm stand on prices, has had a strong influence in this decision and the ultimate lifting of the ban on new contracts by the contractors.

All of the building trades are at work with the supply of mechanics increasing. At present there is no surplus existing, and the general feeling is that no labor shortage will be felt until the close of the current year.

Material prices are fast reaching the firm status, but present levels are not at all in line with what the builders and investors anticipate.

The market for common brick remains strong at \$21.00. This figure is to hold, is felt by many, as the conditions up river are no better and the indications are for no decided change as yet. In the production end, scarcity of labor is an important item. As things are today, none of the producers are running at capacity. This causes a condition of quick buying of cargoes upon their arrival in the local markets. Coal is another handicap that must be overcome by the yards and shipments are no better, so the entire situation is not altogether pleasant.

All the brick that have come down the river of late have been taken at once, with nothing going to reserve. One week of late there were 51 barges received and of these 51 they were all taken at once, the distribution being 50 per cent to Brooklyn, 33 1/3 per cent to Manhattan and the remaining were scattered through the other boroughs, with New Jersey receiving a small quota. Face brick has undergone several fluctuations, with the increases practically balancing the decreases, but the market at the close showed a slight increase.

With the demolition of buildings to make way for new commercial enterprises, second hand brick are beginning to be on the market. In fact, many builders prefer them to the foreign sizes that have been thrown onto this market. To use a foreign made brick, after the plans have been made, necessitates additional work on the part of the architect. Most work is based on American size as a standard. The prices generally quoted are \$50.00@55.00 for a load of 3,000.

Face brick is quoted at \$42.50@43.50 for Rough Reds; \$44.50@47.50 for Smooth Reds; Rough Buffs are steady at \$45.00; Smooth Buffs are \$41.00@47.00; Rough Gray are \$48.50 and Smooth Gray are \$52.00; Colonials are \$45.00.

PACIFIC COAST NEWS.

(Continued from Page 180)

insulating brick, and brick for furnaces and for partitions in large apartment houses, hotels, etc.

The California Encaustic Tile Company is the name of a new project for which application for charter has been filed with the State Corporations Department. Those responsible for the new organization are J. R. MacWilliams, experienced in the tile manufacturing industry, and Frank J. Burton and H. M. Burton of Ontario, Cal. The company has been formed in view of the great demand for encaustic tile, or tile with the colors burned in, caused by the extensive home building in the southern part of the state. Little stock will be offered for sale.

The Chamber of Commerce of Ventura, Cal., which has long been endeavoring to get some one to take hold of their excellent clay deposits, has at last succeeded. A new brick plant will soon be started at an expenditure of \$50,000.

A new corporation has been formed in Los Angeles for the manufacture primarily of tile and brick products. The new corporation is the California Clay Products Company, and have taken over the holdings of the old company of the same name on Santa Fe avenue. The new corporation is headed by W. A. Savage, founder of the Savage Arms Company and Savage Tire Company, and W. N. Hamaker, vice-president of the Continental National Bank. The new company have a twelve acre tract at Cudahy, Cal., where a new tile and brick plant will be built, the present plant on Santa Fe avenue to be used until the new one is prepared. Plans for the first unit are being formulated, and construction will begin in about 60 days on the first unit, to cost upward of \$250,000. Three more units of the same size will follow, the ultimate investment to be about one and a half million dollars. The company will ultimately manufacture ornamental and bath tile, press, fire, paving and building brick, sewer pipe, earthenware, water pipe, electric conduits and bath fixtures.

San Francisco.

SUNSET.

ONE-MAN EXCAVATORS.

The latest catalog of the Bay City Dredge Co., Bay City, Michigan, is styled Catalog E. It describes the Bay City equipment, the fore part covering their one-man excavator, which is of primary interest to the clay, sand and gravel pit operators or anyone requiring a small, inexpensive power shovel or crane. The catalog is well illustrated and the descriptive matter contains much of value to prospective purchasers. A copy will be mailed upon request. Write the Bay City Dredge Co., Bay City, Michigan.



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The World's Most Beautiful Resort Hotel—famed for food, service, hospitality

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Elevator Buckets,
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THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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TRADE SCHOOLS The Training of Apprentices, an Educational Enterprise by the Associated Tile Manufacturers. How the Embryo Tile Setters Are Taught the Theory and Art of That Trade. An Example Which May be Followed by Other Branches of the Clay Trades With Much Benefit to the Building Industry.

AN INTERESTING EVENT occurred at Minneapolis July 24, when the representatives of the Associated Tile Manufacturers met there for a conference with the officials of the Dunwoody Institute of that city, during which there was a demonstration of the progress made by a class of apprentices in the School of Tile Setting. We feel sure the readers of The Clay-Worker will be interested in

manufacturers—a representative of the Federal Board of Vocational Education, and a number of professional vocational experts.

For two days these men deliberated on the subject of apprentice training with special reference to the system developed and demonstrated for the tile industry. At the conclusion of the conference it was the unanimous opinion of



Class in Tile Setting at the Dunwoody Industrial Institute, Minneapolis, Minn.

noting the effort being made for the education and training of workmen in the art of tile setting, for there are similar activities in other branches of the clay trades, and the latter may profit by a knowledge of the procedure of the tile craft.

The conference, which was an event of the most far-reaching importance to the entire tile industry, took place at Dunwoody Industrial Institute, Minneapolis, where the scholarship course in tilesetting of the Associated Tile Manufacturers is now in progress. At this conference were gathered together representatives of the three branches of the tile industry—the labor organizations, the tile contractors, and the

all present that the system of training tilesetting apprentices in accordance with the basic course of the Associated Tile Manufacturers was sound, practical and a necessary step in the advancement of the industry, and that the school should be continued at Dunwoody until a program could be worked out to meet the needs of the country at large.

Upon the arrival at the Institute, the visitors were first shown through the various departments of the school, and then conducted to the working room of the scholarship class. It was quite evident that the visitors were surprised by what they saw there. The students were at work on some of the

regular lesson jobs, but, in anticipation of the conference, had also prepared some special work indicative of their progress and skill. A number of floor sections of different kinds and sizes of tiles were on display. But the real show piece was a small bathroom. This bathroom job was not one of the simplest ones, but included intricate cuts around the tub and fixtures. The practical men among the visitors—the tilers and contractors—could not understand that it was possible for green men, after only seven weeks' training, to do such fine work.

It was a great delight to the visitors to watch the boys at work and observe the ease and dexterity with which they handled the hawk and trowel in applying scratch coats, watch the youngsters put up screed strips, or test their work with plumb and level. Men with thirty and more years of experience could not refrain from commenting on the skill with which these future apprentices used the tools.

The students cut mitres, angles, holes and made other more or less difficult cuts quickly and accurately while the visitors looked on, and none of them seemed to be the least embarrassed by the presence of so many visitors. There was no sign of the usual awkward handling of tools; every move

ganizations, but that these had failed to do anything definite. He mentioned that employers as a rule were not willing to take the responsibility, did not want journeymen losing time in training apprentices, or assure the learner steady employment during the apprenticeship period, but preferred to take away mechanics from their fellow contractors. The labor organizations, on the other hand, had not done anything, he said, because they had worked on the principle of keeping men out of the trade rather than getting new ones in. "Under the present system apprentices or improvers do not receive any particular training. They acquire skill and knowledge solely by observation and by experience. They have no foundation, and a large number of poor mechanics has been the result of this system. Poor mechanics usually make poorer apprentices, and consequently the craft has gradually gone down and down, so that the manufacturers have had to do something to protect their business, and interest themselves in the development of a proper training system of tiling apprentices."

Mr. Walker then related the various incidents which led to the development of the basic course taught to the scholarship class at Dunwoody. He told of the indifference of con-



Lecture Hour for the Tile Setting Class, Dunwoody Institute.

showed plainly that they had been well trained, and knew what to do next.

The students have completed about half of the course; the first unit consisted of floor work, including the various kinds and sizes of tiles and base. They have learned to lay straight and broken joint, basket and herringbone pattern, hexagons, ceramic mosaic and borders, and know how to start, adjust and finish such work. They know how a foundation should be prepared. They have been taught how to put up metal lath and scratch coat. They have been instructed in cutting tiles and are now on the wall lessons.

For lunch the visitors were the guests of Dunwoody Institute at the cafeteria where the students are served breakfast and lunch.

In the afternoon the conference assembled in the gymnasium. Mr. F. W. Walker of the Associated Tile Manufacturers, summarized the purposes of the conference, emphasized the need for better mechanics, the necessity for looking into the future, and for a better method of training apprentices as prerequisites for the further development of the tile industry. He stated that the work of training apprentices was really the duty of employers and labor or-

tractors and the passive resistance of the labor organizations which were encountered simply because the new plan of teaching was not understood. He laid particular stress on one point, namely, that this scholarship course was not intended to turn out finished tilers, but rather well-grounded young men who could be employed as apprentices after finishing the course and earn their way to journeyman-ship. He specifically directed attention to the fact that all features of the new teaching plan were worked out in accordance with the 1923 agreement between the B. M. & P. I. U. and the T. & M. C. A. and the apprenticeship provisions of that document. He concluded by assuring the conference that the Associated Tile Manufacturers' aim from the start had been to work in accordance with existing trade agreements, that the training of better craftsmen had been considered of greater importance than the mere production of more mechanics, and that the manufacturers would continue to co-operate to the fullest extent in the development of the right kind of an apprentice training system.

Dr. L. S. Hawkins, the educational director for the Associated Tile Manufacturers and the originator of the training method adopted for the scholarship course, then presented

a cross section of the general situation and the best thought in the vocational training field. He pointed out as axiomatic that there always will be a difference in attitude, economically speaking, between employers and organized labor on the question of training new men. Employers would rather see an over-supply and labor an under-supply, and it has been this fundamental difference which held them apart. He believed that no one could overcome that attitude, but that this should not stand in the way of bringing the two sides closer and closer together in the matter of apprentice training. He called attention to the need for apprentices in all skilled trades, but that they relied on methods which were good forty years ago and ignored the many changes in conditions which have taken place. He said in part: "The time when the master took a personal interest in the apprentice has passed. A great many different occupations are today bidding for the American youth where he gets anywhere from \$15 to \$25 per week and has to be a learner for little more, and usually less, than a week. Thus the boy goes to the factory, to the store, or to the office where he draws

and another man recording them on paper and taking photographs, step by step, so that the operations could be conveyed to the learner in two ways, by the written word and by picture. The instruction material was then tested by having the man who wrote the instructions do the work according to his own instructions and observe and correct shortcomings in the explanations. Dr. Hawkins laid stress on an outstanding feature of the basic course, i. e., that it makes the student set tile in the first job. He said that poor results have been obtained from many other training courses because they involved too much theory and not enough of the practical side of the trade.

Mr. R. T. Craigo, assistant director of Dunwoody Institute, welcomed the conference and gave a brief history of the school, which was founded and endowed about ten years ago and trains from four to five thousand people yearly, not only young men but old and experienced men in the trade. With reference to the scholarship course he said in brief, "The course of instruction in tilesetting has been laid out in very clear work jobs, and no trouble has been experienced such



Students in Tile Setting Class Preparing the Foundation.

full pay soon after he starts work. Employers in the skilled trades, especially in the building trades, feel this competition keenly. They feel that they can neither afford to pay high wages during the early period of apprenticeship nor take the time of their best journeymen for the training of beginners. The solution, therefore, is to teach the apprentice enough of the trade before he starts work so he will be worth a wage which is attractive to him."

Dr. Hawkins then gave an outline of his reasoning and procedure in the preparation of the basic course in tilesetting. He emphasized that as a pre-employment course it could cover fundamentals only. The first step, therefore, was to determine the fundamental operations of the trade. These were ascertained by taking all jobs, from the simplest floor to the most intricate decorative job, and selecting twenty typical or representative jobs, as a basis, each one progressive in learning difficulty and involving the previous job. The next step was to determine what the student could be expected to learn in a given space of time. The different operations involved in the twenty jobs were therefore analyzed in detail by having an experienced tilesetter do them

as is experienced when men are sent here with no specific instructions. We have not seen any better training than that which is being carried on here in the tilesetting class. In training apprentices, it makes a great difference whether we get the backing of the unions, manufacturers and contractors. Too frequently we have to work with only one. We certainly appreciate being connected with this course of training tilesetters and we would be glad to have it repeated in successive years if arrangements are so made."

Mr. G. A. McGarvey of the Federal Board of Vocational Education spoke of the vocational training which is encouraged by the Federal Board in conjunction with various states and state boards of education. He said he felt the experiment in tilesetting made at Dunwoody could be used in the training of other trades. He thought that most courses have too much of the theory and not enough of the practice, and that this intensive training course gave the boys a much better idea of the actual conditions under which they will work, and that they will consequently be of some value to the contractors from the start. He spoke of the spirit of craftsmanship which makes men take pride in the work, of

the need of expert mechanics, and in this connection mentioned that he had been particularly impressed by the respect of the boys in the tilesetting class for the materials and tools with which they work. He assured the conference that the Federal Board was in sympathy with an honest attempt at apprentice training, such as the tilesetting course at Dunwoody.

Mr. Thos. R. Preece, vice-president of and representing the Executive Board of the B. M. & P. I. U., went into the subject of apprentice training from the union viewpoint, and illustrated his remarks with interesting incidents from his own practical experience. Among other things, he said: "Apprentice training in the tilesetting trade has been neglected in the last thirty years until we have no system at all. It is the same with most of the other trades. If a man does not understand the operations, he can work hard mentally and physically, and not accomplish anything. He must have technical training as well as experience. The brain must work with the hands. When the boys know the technicalities of the job, they can go ahead and work from a blueprint or a plan and do the work easily and speedily. What we need is skilled mechanics, not laborers and helpers. I think that these boys will make first-class mechanics after their training and apprenticeship. This course is the best start made by any trade that I know. It will give us tilesetters of a more even type. This apprenticeship training as outlined in this course is fundamentally right, positively right. If there is anything we can do to improve conditions in the tile industry, we will do everything in our power."

Mr. H. C. Raasch, chairman of the Apprenticeship Committee of the T. & M. C. A., gave a resume of his efforts to induce tile contractors to train apprentices. In conclusion, he said: "I am very much interested in this plan of the Associated Tile Manufacturers. It is something big in the history of the tile industry. Apprentices used to learn on the job, but as competition has become keener and the work more specialized, requiring greater speed, the teaching of apprentices was forgotten. The contractors would take on a helper who would work a while and then be put out as a journeyman. If he had enough ability he would become a tilesetter in spite of the haphazard training. Our method of training is incorrect. Apprentices must at least learn the rudiments of tilesetting in schools so that, when they are serving the rest of their term, they will be of some use. I think this has to be done at once and this school is a very good beginning. Of course we can continue to improve this indefinitely. This system is going to work out, I think, and if it does we shall have the tile industry on the plane where it should be."

Mr. Bartel, business agent for the Chicago Tilesetters' Union, called attention to the necessity of training the men so that they will be able to meet the varying conditions on actual jobs.

Several of the Chicago tile contractors expressed themselves as heartily in favor of this method of training, because unskilled tilesetters are a decided reflection on the tile industry.

Mr. E. L. Bowman, educational director of the National Trade Extension Bureau of the Plumbing and Heating Industry, reviewed some of the conditions which must be considered and met in any training plan. He presented a vivid picture of the situation in his own field.

Dr. C. A. Prosser, director of Dunwoody Industrial Institute, addressed the conference the following morning. His remarks are of significance because they come from a man who has had extensive experience in vocational training and is thoroughly familiar with both the practical and pedagogical sides of the problem. The following are excerpts from his

remarks: "I do not know of anything that has taken place at Dunwoody which has interested me so much as this tilesetting work. The reason I have been so interested is twofold: First, because I think some excellent work is being done; second, because I look beyond this little school here and this tilesetting course, to the effect of this experiment on the whole country, and to the significance it will have, not only to the tile business but to all of the trades. Men like Hawkins, McGarvey, Bowman and myself, who have been in this work for a long time, see the national effect of things that are done like this. In practically every trade, both employers and unions have come to realize that trades have apparently lost their old ability to recruit and train new workers. It is rather a strange thing that employers spend any amount of money on expensive machinery and in the organization of their business, but they have little or no money to put into the training of workers for their business. We educational men have not known what to do, we have had nothing in our hands to work with. The big thing is to standardize the training and get down to brass tacks, get it organized and try it out. That is what you people are doing here and that is why I am so vitally interested in this tilesetting course. You have something definite to work on, have the plan all laid out, and then you try it out in a school to check up. The importance of what you are doing will spread beyond the tile industry and will affect all other lines. You people have set some marks for us. It is a big service the tile industry has done in working out this scheme, and it is going to attract national attention and will have its effect upon other trades and associations which will be inspired by it and profit from your idea. These boys are fine fellows and pretty well selected boys. Their spirit is excellent and I think they like the school and we like them. We would like to have you know that if you want to have another class here, and if you finally decide that you are going to run a succession of courses, we will be glad to give you quarters just as we have now. We are proud to have been connected with this work and will be glad to cooperate with you. I think you could offer this course to any big city in this country and it would be satisfactory."

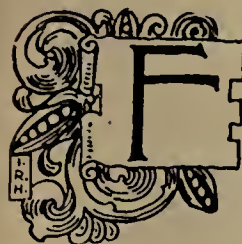
In the afternoon, the conference confined itself to a discussion of a generally acceptable plan for pre-employment training of apprentices in accordance with the apprenticeship agreement and the basic course. It was the consensus of opinion that all men entering the tilesetting trade should take a course covering the twenty lessons of the basic course. The suggestion that the school in its present shape be continued until a national co-operative program could be perfected, met with hearty approval, and it was decided to select and train at least two additional classes of twenty under the same conditions and in the same manner as the first scholarship class.

TESTING CLAY DRYING.

THE PROPER drying of clay products preparatory to burning is a matter of enough importance that the clayworkers of the country will surely be keenly interested in the offer of the Bureau of Standards to make a series of tests on the drying properties of clays and is asking for samples to be tested. Members of the N. B. M. A. are already informed of this matter as it has been broadcasted to the membership in circular form. Those who are not members and are desirous of other particulars with a view to submitting samples should address Geo. K. Burgess, of the Bureau of Standards, Washington, D. C.

Written for THE CLAY-WORKER.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



FOR THE FIRST TIME in over a year past Washington foreign trade authorities have been able to secure something like a definite line on the often-reported brick imports from foreign countries into the United States. At more or less regular intervals since January, 1922, the rumor

has gone the rounds of eastern building material circles that we are on the eve of an inflow of European brick from Denmark, Netherlands, Holland or some other country. And while these reports appeared to be definite enough on their face, it has never been possible to trace them to an authoritative source nor to verify their truth in any satisfactory manner. The officials of the Department of Commerce on various occasions disclaimed knowledge of these foreign purchases coming in as regularly-recorded imports, stating that had they been shipped in anything like the reported quantities it was very probably as ship ballast or in some similar way.

Today, however, the brick manufacturing industry of the United States appears to be face to face with a very well defined effort to turn a large part of their domestic market over to Holland brick producers. Not only does this appear to be true, but the fact stands out that various deals have already been consummated by which these Holland concerns are to ship into this country within the next twelve months considerably over 200,000,000 common brick. The Hollanders, according to the statements here, have the contracts for furnishing these brick safely tucked away in their inside pockets, signed by at least two leading importing houses in New York, although it may develop that several other importing concerns on the Atlantic seaboard are very directly concerned.

The story comes to Washington with much definiteness and in considerable detail, and it now appears probable that both German and Belgian brick plants are in the very near future to find ready and willing buyers in the United States. In several instances, says the information here, some of the large brickmaking plants in the tide-water section of Holland have already sold their entire output for the next year to American importers.

Two significant aspects of the situation, it is pointed out here, are that careful and deliberate preparations appear to have been made to bring about a steadily inflowing volume of common brick from these European manufacturers, and the fact that they can evidently be thrown on the eastern building material markets at substantially lower prices than our American brick. These statements are rather fully confirmed by the fact, which is known here, that American importers have placed in the hands of the foreign brick manufacturers, American molds, in order to insure the production of brick of the standard American sizes, and which can be sold and readily used here. As to price, well-informed authorities here point to the fact that brick prices in Atlantic coast cities run from \$19 to \$24 per thousand, while Holland brick can be set down in New York, Boston or Philadelphia at \$15 to \$17, and which is said to include a good profit for the importer.

There appears to be no uncertainty but that very definite and carefully-laid plans have been made for handing over a large section of our United States domestic brick market to foreign producers, and it would seem to be "good business"

for our manufacturers to keep a close watch on developments for the next few months.

The Department of Commerce reports the following prices for common brick as having obtained in thirty-eight cities on August 1. Price is given per thousand. Following are the figures:

Detroit	\$17.50	Pontiac	\$16.00
Bay City	15.65	Benton Harbor	16.00
Milwaukee	13.75	Waterloo	16.50
Council Bluffs	16.00	Des Moines	19.00
Kansas City, Mo.	16.50	Pittsburgh	18.00
Cleveland	16.00	Akron	16.00
Lorain	23.50	Newark	18.00
Dayton	18.00	Fitchburg	24.00
Haverhill	26.00	Fall River	27.00
New London	32.00	Poughkeepsie	20.00
Albany	18.00	Schenectady	25.00
Rochester	17.75	Buffalo	23.00
Scranton	25.00	Baltimore	20.00
Richmond	19.00	Fairmont	26.00
Columbia	13.00	Savannah	17.50
New Orleans	17.75	Grand Forks	15.00
Sioux Falls	18.00	Shreveport	15.00
San Antonio	17.00	Tucson	15.00
Sacramento	17.00	Portland, Ore.	20.00

The following prices are quoted for hollow tile (size, 8x12x12) on the same date, each:

Detroit	\$0.20	Pontiac	\$0.18
Bay City	.18	Milwaukee	.18
Waterloo	.17	Council Bluffs	.14
Kansas City, Mo.	.17	Pittsburgh	.21
Erie	.24	Akron	.17
Lorain	.18	Newark	.19
Dayton	.21	Haverhill	.30
Poughkeepsie	.23	Albany	.27
Schenectady	.30	Rochester	.21
Buffalo	.21	Scranton	.25
Baltimore	.24	Richmond	.20
Fairmont	.26	Columbia	.19
New Orleans	.24	Sioux Falls	.19
Shreveport	.22	San Antonio	.23
Tucson	.18	Portland, Ore.	.20

The Tariff on Brick.

The United States Tariff Commission has called a meeting for October 1, at 10 a. m., at its offices in Washington, for the purpose of investigating the present tariff on magnesite brick and magnesite, and in order to secure for the use of the President all necessary data to enable him to arrive at a decision whether or not to reduce the import duty at present levied on these lines. In its call for the meeting the Tariff Commission says:

"The United States Tariff Commission on this 11th day of August, 1923, for the purpose of assisting the President in the exercise of the powers vested in him by Section 315 of Title III of the tariff act of 1922, and under the powers granted by law and pursuant to the rules and regulations of the commission, hereby orders an investigation of the differences in costs of production of, and of all other facts and conditions enumerated in said section with respect to, the following articles described in Paragraphs 204 and 201 of Title I of said tariff act, namely: Crude magnesite, caustic calcined magnesite, dead burned and grain magnesite not suitable for manufacture into oxychloride cements, and magnesite brick, being wholly or in part the growth or product of the United States; and of and with respect to like or similar articles wholly or in part the growth or product of competing foreign countries.

"Ordered further, that all parties interested shall be given an opportunity to be present, to produce evidence, and to be heard at a public hearing in said investigation to be held

at the office of the commission in Washington, D. C., at 10 o'clock a. m. on the 1st day of October, 1923.

"And ordered further, that public notice of said investigation and of said public hearing shall be given by posting a copy of this order for 30 days prior to said 1st day of October, 1923, at the principal office of the commission in the City of Washington, D. C., and at the office of the commission at the port of New York, and by publishing a copy of this order once a week for two successive weeks in Treasury Decisions, published by the Department of the Treasury, and in 'Commerce Reports,' published by the Department of Commerce, copies of which said publications are obtainable from the Superintendent of Documents of the Government Printing Office in Washington, D. C., the latest of which publications shall be made not less than 30 days prior to the 1st day of October, 1923."

Y. M. C. A. to Have a School For Bricklayers.

The Washington Young Men's Christian Association announces that the prospects of high remuneration again have attracted large numbers of students from the classes which prepare them for the "white collar" jobs and put them to studying the highly-paid and highly-respected trade of bricklaying. The association, therefore, has inaugurated a complete course of instruction in laying bricks.

Numerous calls have been received at the "Y" here in the past few weeks inquiring about such a course, the callers evidently liking the talk of \$20 a day for the work. So the organization has yielded to the popular demand and from this time on will teach bricklaying in all its branches.

E. A. Drum, a well-known brick man here, will have supervision over the school. The course will embrace lectures, demonstrations and individual instruction in the laying of common brick and hollow clay tile and the mixing of mortar. A large number of students have already enrolled for the course.

The National Brick Company, long located at 1402 I Street, N. W., has removed its offices to more spacious and convenient quarters at 710 Fourteenth Street, N. W., in the Union Savings Bank Building. The concern has one of the best equipped plants in this section at Terra Cotta, D. C., in the northeastern part of the city. The company has had a busy summer, and has many large orders on its books for early fall delivery.

Interesting Tests by Bureau of Standards.

The United States Bureau of Standards has just completed a series of interesting tests of the physical proportions of clay bodies as affected by drying treatment. The tests are being carried out in co-operation with the investigation of the effect of various potters' flint in semi-porcelain bodies. In this way drying effects are being traced from the plastic to the burned state, and the effect upon the drying behavior of variation in the body composition is noted.

Observations are being made to determine the effect of gravity upon the uniformity of drying and shrinkage in large commercial pieces. It is expected that it will be possible to establish a set of standard laboratory drying tests, similar to the firing tests now used, and from these the ideal drying treatment and resulting effects may be reported for any clay or body which may be submitted to the Bureau for examination.

The Bureau also announces that work is in progress on the development of a penetration type of plastometer to be substituted for the capillary tube plastometer. The latter form is not applicable to very stiff paste or bodies, such as those used by potters in the molding of forms, but is used

in the study of clay slips employed in the casting process, but not the study of the molding range.

With the capillary tube plastometer, the shearing stress is varied by changing the total pressure acting on the material, while in the penetration type, the shearing stress is varied by changing the pressure of the penetration rod.

During the month of August the Bureau continued its studies and experiments on the architectural properties of terra cotta. During the month, 110 balusters and sixty-eight coping blocks, burned in commercial kilns, were forwarded to the Bureau for test and have been set in mortar and exposed for weathering. A duplicate set is being saturated with paraffine and will also be subjected to the weathering tests. Absorption is being determined on balusters, and tests for this property, as well as for transverse strength, have been made on specially-prepared bars representing five bodies used in the manufacture of terra cotta. The data thus secured will be correlated with the heat treatment which the respective pieces receive in burning.

ALTHOMAR.

STOPPING THE FREIGHT ADVANCE.

THERE IS A little organization in Kentucky known as the Kentucky Clay Products Association with a live-wire traffic committee headed by J. T. Howington, of the Coral Ridge Clay Products Company, which has just furnished a shining example of good work in stopping efforts on the part of the railroads to increase the freight rate on clay products through the filing of new uniform brick list tariffs.

Analysis of the new uniform or general brick schedules filed, which were to become effective in August, showed that they meant an increase in freight rates which would put an additional and unfair burden on the delivered cost of clay products.

Mr. Howington, who is head of the traffic committee, got busy in preparation for this and had Traffic Manager B. A. Word prepare record blanks on which members were asked to report shipments and the present freight being paid. These reports were extended to show what freight would be under the new schedule, and they furnished conclusive evidence that it meant increased revenues for the railroads:

The the law firm of Norman, Quirk & Graham of Louisville was asked to draw a petition to the Kentucky State Railroad Commission, praying for the suspension of the proposed rates in so far as they concern intrastate traffic.

This suspension was not only granted promptly but soon and while the committee was busy lining up its forces for the final hearing, the railroads concluded to accept this suspension without making any fight.

The result naturally is a decided victory for the traffic committee of the Kentucky-Clay Products Association, and it is probable that it will prove a factor of importance in putting a general check to increased freight rates on clay products all over the country under the guise of filing uniform tariffs.

So what is perhaps the smallest clay products association in the country, has done some of the biggest work of the year, and has made some history that speaks well for itself and which demonstrates the importance of having organization machinery to handle matters of this kind when they come up.

Standard or uniform cost systems and accounting methods for clayworkers are an aid to mutual understanding of the different factors of cost and they clear the way to better understanding on the part of bankers when loans are to be made.

Written for THE CLAY-WORKER.

LAWS GOVERNING FIRE INSURANCE.

Features of Particular Interest to Clayworker.



WHEN A BUSINESS man enters into a contract regarding some technical matter a little out of the ordinary run of his own business, he does not usually depend entirely upon the opinion of an expert who is agent for the other party to the contract. It is a singular fact, however, that when entering into an insurance contract, almost everyone does this very thing. He takes the opinion of an insurance agent, and would scarcely know where to go for independent advice. Fortunately, in this one subject at any rate, the law favors the general public instead of the insurance company, it being recognized that the former trades at a disadvantage.

Anyone who carries a fire insurance policy ought to know a few things, some of which we will try and state in this article. Most of the state nowadays have, by legislative enactment, adopted a standard fire policy to which all the companies are required to conform. To meet the exigences of particular cases, it is permissible, by agreement between the policyholder and the company, to make special conditions, and have them written into the policy. Such variations, should they happen to be at variance with any of the printed conditions, will be followed.

Going along with these special conditions, and not infrequently growing out of them, the company will always make certain stipulations intended to minimize the risk of fire. These stipulations cover a vast variety of matters, including materials which may or may not be kept on the premises, prohibiting obstructions in stairs and passages; the construction of chimneys, furnaces, kilns, etc.; the appointment and the duties of watchmen; the hours during which the premises shall be used; the length of time they may be left unoccupied; conditions as to repairs and improvements; and fire extinguishing appliances, fire drills, etc. Of course it is generally understood that should a fire occur, and should it appear that any of these important stipulations have been broken, the company can not be compelled to pay the insurance money. Suppose, however, these stipulations have at some time been neglected, and again at some future time they have been properly carried out; then the fact that they were all properly observed at the time of the fire will prevent the company from resurrecting any former breaches of the stipulations. The only thing the law will regard is the condition at the time of the fire. To this latter rule there are no exceptions, but on the other hand the law is not quite settled as to whether there can not be some amount of money payable, though of course not the full extent, where some of the stipulations have not been fully carried out. Some courts have inquired as to whether the disregarded stipulations were absolutely material to the contract, and whether the breach of them was so serious as to warrant the company in withholding the whole of the insurance money. The general tendency, however, on this point is to support the companies.

A fire policy for a pottery or any kind of clayworking establishment should cover not only the actual building but all machinery, fixtures and everything which can be damaged by fire. It should also be worded to cover the fluctuating stock (clay, coloring materials, etc.), and all manufactured or partially manufactured goods in transit from the time they

enter to the time they leave the premises. Some companies have policies which have been specially drawn up to meet particular businesses, where the conditions are rather special, with what are considered to be the necessary stipulations already added. All of them have certain similar stipulations which they always propose. The prospective policyholder should remember that, from the legal point of view at any rate, these stipulations are always matter for negotiations, although there is a good deal to be said for the general adoption of a well tried policy which has given satisfaction to both sides, because on this point the company and the policyholder have considerable similarity if not identity of interest. It will not be to the advantage of the honest policyholder, any more than of the company, to run avoidable risks.

There have been cases where insurance companies have endeavored to escape paying the insurance money on the ground of the misdescription of the building. For instance, suppose a building is described as being made of brick, and it proves to be made partly of brick and partly of stone—perhaps an unlikely event in the case of a clayworking establishment—or partly of brick and partly of wood. In such cases the courts lean very decidedly the side of the policyholder. Unless it can be shown that there was a far greater risk of fire than the insurance company had been led to believe, or that its inspector had in some way been wilfully deceived, it is not likely that the company would escape its responsibility.

This brings us to the point of reformation of policies. Suppose from any cause your policy does not accurately describe the property. This may arise from honest mistake when the policy is drawn up, or it may be that alterations have been made of which the company have approved. To prevent possible misunderstanding should you have to call upon the company to pay the money, you would be well advised to have your policy re-worded in conformity with the facts. It is scarcely likely that the company would object to this proceeding. After the fire has occurred, however, you may want your policy re-worded, and if you can show that the property damaged was the property intended to be protected, the courts will permit you to re-word it and enforce it as re-worded, although under the old wording you might not be able to make the company pay. The courts will be very careful, however, not to come between the policyholder and the company in the matter of the contract itself. If you are not satisfied with your policy, the courts will not help you either to make a new one or in any way to vary the actual conditions of the old one. They will only help you to correct the wording of your old policy.

The question which sometimes arises is in regard to the insurance of different interests. Other people may have an insurable interest in the premises besides the man who is running the business. There may be joint owners or partners, mortgages, or creditors. The standard policy is very explicit in stipulating that any change in interest must immediately be notified to the company, and this must be done immediately the agreement is made which transferred the interest. This condition is strictly enforced. You can not legally carry more insurance than your interest warrants, although the property may lawfully be insured twice over in case a creditor or mortgagee takes out an independent policy. Under the standard policy, however, the interest of mortgagees are taken care of by a special mortgage clause making the loss or damage payable to the mortgagee "as his interest may appear." It is also stipulated in such cases that the mortgagee shall pay the premium if the mortgagor should fail. When,

therefore, a fire occurs, the mortgagee will receive his proportionate share and the mortgagor will get the remainder. Unless the mortgage clause has been added, the mortgagee will have no interest in the insurance.

There are some things which the standard policy will not protect you against. If a fire is caused by war or riot you are not protected, though you are protected against the individual "fire bug." It takes three or more persons to make a riot.

The standard policy also relieves the company from paying for goods stolen in the general confusion following a fire. Under older forms of policy the companies were often held

policy should always remember: (1) A policyholder can not be too careful to see that he understands clearly just what risks he is and is not protected against; (2) in case of doubt he should have his policy read by a lawyer who specializes in insurance; and (3) if he suspects he is not getting an absolutely square deal, he should at once ascertain his legal rights, and not be at all diffident about enforcing them, because in doubtful cases, where there is no fraud on his part, the courts frankly and confessedly lean to the side of the policyholder.

Written for THE CLAY-WORKER.

OLD BRICK LAND MARKS ON THE HUDSON.

SOME of the early settlers of the Hudson River section of the country coming from Europe were fairly well-to-do, bringing with them all the essential equipments of their dwellings and for stocking and tillage of their land.

After a few years of proverbial industry and thrift these early settlers were enabled to replace these temporary



Picturesque Covered Bridge, Kinderhook, N. Y.

liable for such losses. They are also now relieved from the obligation to pay when the policyholder has not used all reasonable means to save and preserve the property at and after the fire, or when the property is endangered by a fire in neighboring premises. On the other hand, if the fire has been caused by simple negligence on the part of the policyholder or his employees, the company will have to pay just the same, unless the negligence referred to has been so gross and liable as to amount to criminal negligence.

A fire insurance company will not pay for loss caused by explosions or by lightning, although it must pay for damage caused by a fire which arises from these causes. Special arrangements can always be made to protect the property against lightning and explosions. If a building collapses from any cause other than fire the company is not responsible, but if fire is the cause of the collapse the company pays. This is even true in case a neighboring building is on fire, and a wall falls against the protected property and causes damage, even though the protected property itself may not catch fire.

The standard policy has some peculiarities. Unless you have made special provision for it you can not operate your plant after ten o'clock at night without permission of the company, and if you should close down for ten days with the intention of ceasing business, your insurance ceases. In regard to alterations, anything which can be done in fifteen days time or less, can be done without consulting the company unless it breaks some other stipulation or condition of the policy. If, however, you intend to have mechanics, carpenters, builders, etc., working on your place for more than fifteen days, you must first consult the company or you will have forfeited your insurance. Painting the building, however, does not count as repairing, therefore you can have the painters and decorators in for as long as you like.

In conclusion, there are three points the holder of a fire



Brick Homestead, Kinderhook, Built in 1737.

structures with more substantial, and, for their time, even elegant homesteads. A few of these old homes, at least three, are still to be seen in the village of Kinderhook, Columbia County, New York, with their massive walls, long steep roofs, immense oaken beams painted and varnished and almost as impenetrable to a nail as iron, their tiled fireplaces, and their heavy outer doors divided horizontally in the middle having imposing iron and brass knockers.

The brick in these first homes and forts were possibly "brought from Holland." A building, used for a home in later years, was built in 1623 for a fort and refuge house in the early Indian wars. This old home was burned April 2nd, 1923. Bricks were found in the walls bearing the date of 1623 and some were found in the chimney with the date 1620. The brick used in the chimney were of a different size and shape than those used in the house, being $7\frac{3}{4} \times 7\frac{3}{4} \times 2\frac{1}{4}$ inches. After the debris had cooled enough to be handled the brick bearing these year marks were quickly carried away as souvenirs. Some of the huge beams in this old fort house bore traditional traces of Indian warfare and near the peaks of the roof were old time port-holes.

There is a record of brick importation as late as 1661. They were sold for \$4.18 per thousand, and payable in beaver skins.

* Brickmakers came to this of the country in 1630; and there were at least two brickyards built in Kinderhook, where most of the old homesteads were built, and there are records in 1630 reporting the sale of land for the manufacture of

brick and tile. There is on file a letter written in 1643 to Governor Kieft which reads:

"I would like to contract for some hundred thousand bricks as there is a fine clay in the Colony for that purpose."

This writer having heard that the English were about to establish a "brick-kiln" on Fresh River and he wished to commence his operations first. From this time on the brick industry kept spreading and enlarging until at the present time there are several hundred plants along the Hudson river trying to supply the demand of New York City alone.

Written for THE CLAY-WORKER.

THE NEW YORK BRICK MARKET.

FURTHER CUTS in basic building material prices are recorded in the current Dow Service Daily Building Reports, which are analyzed for the New York building construction and allied industries as follows:

Optimists say that the draw-back in basic building material prices at this time of the year is seasonable. Pessimists account for the phenomenon by assuming that building construction has been overdone. The well informed business men, on the other hand, who, being neither a chronic optimist nor a perpetual pessimist, studies the fundamentals affecting his business as he finds them and discovers something entirely new about the building material situation in



The Benedict Arnold Inn, Kinderhook, N. Y., Built of Brick, 1770.

particular and the building construction business in general. He finds himself face to face with a problem he has never before had to meet, namely, the buying and selling of European building materials.

His mind clouds before the strange dilemma. Long years of domestic trade connections are not to be carelessly broken. Yet the building owner insists upon lower building material prices since he cannot reasonably expect to find labor costs reduced during the life of his contemplated job.

The investor sets as his condition of progress on the projected operation, lower construction costs. If the American made building materials offers no inducement, and foreign-made material does, a market is at once established for European brick, cement, glass, structural metals, insulation material, ceramic ware, and even fabricated trim.

The building material purveyor knows full well that just so long as demand for building materials exceeds the ability of the manufacturer to meet it, he can maintain trade relations with profit with foreign manufacturers, mostly on a spot cash basis. But when the American manufacturer raises his production capacity to a point where he can so lower his

costs as to meet the foreign-made product on American shores on an equal, if not on an under-price basis, plus certification of standard quality and credit facilities, the question arises as to what his trade rating will be and what effect such a rating will have upon him half a decade hence.

The importer of building materials knows that Germany's only way out of its financial muddle is by excessive taxation. Other nearby countries will immediately find it imperative to increase their taxes, too. Business profits will be very meager, at home, but rich abroad, especially with American trade. European goods must be sold in America, tariff or no tariff, and building materials offer a rich field. Labor in Europe will not be so disturbed about length of working hours as about the necessity for getting food. What does not go for food will go toward taxes instead of automobiles, radios and silk shirts.

One importer alone is returning next week from Holland with contracts signed and sealed for the entire output of tide-water brick plants, totaling 200,000,000 common brick, all made from American molds he took over with him, so as to insure delivery here of regular size American brick. There are importers who have obtained similar contracts with German and Belgium brick plants.

Cement manufacturers stand apart because of their anticipation of such a situation as now exists. In recent years they have been steadily adding to their daily capacity and are still doing it.

In the Lehigh district alone Nazareth has added 700 barrels daily to its output; Dexter, 1,000; Penn Allen, 700; Pennsylvania, 800; Bath, 600, and Phoenix, 600 to 800.

The Lawrence has plans on hand now for a 33 per cent. increase in daily capacity; the Glens Falls is putting in an additional kiln; the Pennsylvania plant at Cayuga have just put in a new kiln and the Atlas by acquisition and installation has added 11,000 barrels to its output.



Kinderhook Masonic Temple, a Modern Brick Temple.

In consequence when foreign cement began coming in it was not able to penetrate more than 75 miles inland and its bulk has been confined mostly to New Orleans. The price-without-change policy maintained since last autumn has met the demand for price stability at home and has kept down foreign competition at the same time.

Friendly rivalry between clay products, cement products and lumber products may be good in that it leads to enterprise and progress. But unqualified condemnation of one of these products by promoters of the others is not good business and does not help to a better understanding all around to beget good permanent results.

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Eight.

BURDEN ANALYSIS FOR CLAYWORKERS.

THE MANUFACTURER of clayware is rapidly discovering that overhead can not be ignored or treated as a casual item in his cost analysis. As a matter of fact, it is becoming more and more apparent that intelligent and scientific estimating of costs is largely concerned with the collection, classification and proper distribution of overhead.

The Classification of Overhead.

In order to make this scientific distribution a reality, it will be found necessary to separate the indirect expenses into two groups:

- (1) The selling and administrative expense, or office cost, as it is sometimes known.
- (2) The plant expense.

An indication of what might constitute the administrative and selling expense was outlined in an earlier article when the expense order numbers were issued. It is customary to maintain separate records and to make separate charges for the administrative and the selling expense. But since selling expense is not as important an item in this field as it is in others, no separate records are kept. The two sets of expenses are lumped in one. However, it is very important to separate the selling and administrative expense from the plant indirect expense. The reason for this is that the selling and administrative expense is applied as a percentage of the total plant operating cost, while the plant indirect expense is applied in a totally different manner. This will be explained in detail later.

Administrative and Selling Expense.

It is inevitable, when considering the make-up of the administrative and selling expense, that executive salaries should head the list. The president and other officials of the company, or the plant owner, if one man only owns the business, must assign to themselves such salaries as they think would be theirs in a similar position while working for someone else.

Having disposed of the executive salaries, it is necessary to consider the case of the salesman, if any are employed. Some clay men pay their salesmen salaries, while others prefer the commission basis. The latter would seem the less desirable from many points of view.

Getting orders for clay products is somewhat different from ordinary selling. To a certain extent, results depend on the salesmen's ability and willingness to hustle. But largely, getting business depends on a thorough knowledge of the clay, its reaction under given conditions, and on such efficient plant management that the price of the ware and its quality compare favorably with those of any competitor. Consequently, it is advisable to pay the salesman a salary, because he is not only a salesman but essentially an engineer.

The salaries of the bookkeeper, stenographer or other office clerks employed must be included in the list of selling and administrative expense. Where the plant is large, a

part of this expense may be apportioned to plant overhead. But as a rule it is charged to the office.

Office supplies constitute another charge to this group. Stationery, stamps, and any other office supplies not specifically provided for elsewhere come under this heading.

Should it be found convenient to maintain an automobile for the use of the sales force, that expense must be charged to the office. Any other expenses incurred while making an effort to obtain orders would be handled in a similar way.

Advertising must also be included among the office expenses. This would cover any form of it, whether it is newspaper and periodical announcements, circulars, or souvenirs.

In case a plant owner decided to pay his salesmen on a commission basis, he should charge all such expenditures to office expense. Of course, if the orders are big enough, it is possible to charge the commission directly. Membership fees to trade associations make up a part of the office expense.

Printing, telephone, charities and miscellaneous expenses complete the list of the selling and administrative overhead charges. And those items subsequently listed as plant operation expenses must be carefully analyzed so as to distribute their share to each lot of material excavated and ware produced.

Plant Operation Indirect Expense.

In considering the plant indirect expense, the salary of the superintendent is the first to be examined. It is the duty of the superintendent to assign, supervise and inspect the work. As his duties can not be defined so minutely as to enable him to spend a certain amount of time on each operation and then have his work charged to that operation, it is necessary to charge the superintendent's time to overhead and to allocate a portion of this to every operation.

Timekeepers, storekeepers, supply clerks and any other men who do clerical work in the plant itself should have their time charged to the indirect expense. The small plants usually have no such expense.

Another item on this list is that of general or non-productive labor. Although this heading in itself is subject to several classifications, it is necessary to lump non-productive labor in one group. This is largely to be made up of helpers in the plant who do not work at regular tasks but are employed to keep the machinery, dryers, kilns, et cetera, clean and in repair, and to do any of the odds and ends that the plant requires. It is also necessary that the plant be charged with all the idle time incurred by productive workers who are paid daily wages. For example, the men on the pug mills may turn out enough ware by 4 o'clock to fill the dryers. They would have to be paid for the extra hour even if there is no other work for them to do.

The Building and Equipment Charges.

If the manufacturer owns the buildings which house his kilns and his dryers and his stock warehouse and other

equipment, and if he makes repairs on them that can not be considered as adding to their life but merely as keeping them in a safe and good condition, this expense should naturally be included in the overhead.

The next item to consider is that of machinery. Any repairs to the machinery that do not, for all practical purposes, make the machines new again, must be included in the list of plant expense. The same would apply to the replacement of non-durable tools and repairs to any of the other equipment.

Any repairs to the machines and equipment, such as stopping up air-holes, replacing belts, realigning shafts, et cetera, must be taken into account when the list of expenses is made up.

The cost of printing time cards, expense slips, cost records, and all the other documents used in the plant must be charged to expense. This item should not be confused with a corresponding one in office expenses. There, only the commercial forms and documents are accounted for.

Electric current must be charged to indirect expense. This is the current that is used for lighting and for machine power. Coal used for firing and heating the office should also be included. The cost of gasoline for driving the trucks or for driving any engine must be forgotten. Maintenance of the trucks and garage, salary of the drivers and other incidental expenses are all parts of the indirect expense that must be provided for.

Rent, Depreciation, Interest and Insurance.

The above four subjects cover the indirect expense components about which there have never been any questions. However, there are some charges, also a part of the overhead, which have been the subject of debate among manufacturers and cost experts.

The first of these is depreciation. Many clay men ignore the item of depreciation altogether. When they do include it, they usually make an arbitrary charge without considering the purpose of a depreciation fund at all. Depreciation is charged in recognition of the fact that in addition to the ordinary mishaps that may occur to any mechanical device, which damages can be repaired when they occur, there is reasonable wear and tear on the machinery and equipment that can not be replaced by repairs of any sort. Consequently a fund must be provided which will be available for the purchase of new equipment when the present machines and equipment wear out or are no longer usable.

In addition to the actual wear and tear, there is obsolescence to be considered. Occasionally machines and apparatus become impractical because newer and more efficient equipment is put on the market. In such a case it would not be advisable to go on using the old machines when in competition with men who are using the new ones.

The amount of depreciation to charge each year depends on the type of the kiln or machine or other equipment under consideration, their condition at the time erected and bought, the character of the usage that they are likely to get, the existence of external conditions that make for quick deterioration or for long life, et cetera.

When a machine is bought second hand, care should be used in determining the exact amount of usage it has already received so as to be able to estimate its remaining life. This information should be made one of the conditions of the purchase, since a machine that has had hard usage, even if it appears all right, is quite likely to go to pieces at any time.

Repairs Not Depreciation Charge

A great deal of confusion exists in the minds of some

manufacturers as to the distinction between the repairs and charges for depreciation. Some men believe that if repairs are made and if they are charged to the cost, no depreciation charge should be made. But the two charges are quite different in their character. Depreciation is a reserve against the time when equipment will be useless and will have to be replaced. Repairs usually follow a damage.

Naturally it is important to decide with great accuracy just what constitutes improvement to the equipment and consequently an increase in the assets, and what is merely repair work that forms a charge against the revenue.

Repairs are not improvements in the ordinary sense. Repairs merely replace broken parts and keep the equipment in condition to be used. Improvements enhance the value of the equipment and machinery. They are additions to the capital investment and not a charge against the revenue of the business.

The cost of non-durable equipment is not to be added to the assets. This cost is a charge against the revenue and must be included in the overhead. All equipment, machinery, and buildings should be insured. The cost of this insurance forms part of the overhead of the plant. The insurance premiums should be divided by twelve; and 1/12 should be charged off each month so that monthly comparisons can be made properly. Liability and compensation insurance should be charged to overhead as well.

Rent

Rent is another debated question. To nearly everyone, it is apparent that rent itself should be charged into overhead. But when we come to the case of a man who owns his building we find a wide difference of opinion. Some think that such a man should charge himself rent and others do not.

Suppose this man has to borrow money to buy the buildings which hold his plant. He would certainly have to pay interest on the money. This interest should come out of the overhead since it is just as much a part of the cost as the rent is, in the case of the man who does not own his buildings. But, then, if a man may charge interest on his building investment, why not charge interest on his equipment investment and his money tied up in stock? These charges must be taken into account if the overhead is to represent the true cost.

Difficulties in Applying Overhead

The problem in cost finding is to charge each operation with the cost it incurs. With a little effort this is an easy thing to do in case of prime costs. But charging the proper amount of indirect cost to each operation is much more difficult.

If the manufacturer would be able to count on a constant overhead at all times of the year, he would find it an easy matter to apportion a fixed charge to all jobs so that each one would contribute its share of the expense. Then the only problem would be to adjust the rate to the volume of business as the volume of business changes, so that an adequate return would be insured.

But the overhead is not fixed. It varies with the volume of business. It also varies with the season and with the nature of the separate components of overhead itself.

The Fixed Indirect Expense

Of course, there are some items that are more or less constant. On examining the list of overhead items, it will be seen at once that the salary of the executive staff, for example, must go on at all time. They are a part of the business, and this item would not vary unless their salaries were cut or raised as the business warranted the change.

Clerical salaries, office supplies, association dues, printing

and stationery, and telephone charges are likely to remain constant. Advertising, commissions, traveling expenses, and similar expenditures vary with business conditions.

In the case of plant expenses, the lines of cleavage between the fixed and the variable charges are more distinct. The rent, light, heat, power, repairs, insurance, maintenance charges, and the salary of the superintendent have to be paid regularly, regardless of the condition of business. Repair charges usually follow the damage so that this cost is unavoidable. Depreciation also goes on regardless of the volume of business, except that machinery depreciates more rapidly when it is idle than when it is in constant use. The drivers work by the week and there is usually just enough work around to make it impossible to lay them off.

General or non-productive labor will decrease when the business volume drops except in plants that make a practice of keeping together an organization once it reaches the point of efficiency the plant owner wants. Gas, gasoline, traveling expenses, and printing will change in proportion to the business done.

Change in Rate

Owing to the fact that some expenses are fixed and do

basis of this average. The various methods of averaging expenses together with their respective advantages and disadvantages will be discussed in another article.

Monthly Comparisons

In order to keep overhead expenses within proper control, it is necessary to compare them with previous reports of expense. Some men prefer to compare each report with that of the previous month on the theory that, provided expenses are normal, there is not enough variation from one month to the next to justify a great disparity between corresponding items of the two months. Others prefer to compare a month with the same month previous. This would seem the better way for manufacturers of clay ware.

(To be Continued.)

THE BUILDERS OF ANCIENT TIMES.

ARCHITECTURE is not a modern art, but the builders of this century are meeting modern requirements. The ancients builded better than they knew it would seem from the discoveries being made in Pompeii. Explorers are unearthing relics of great value. King Tut's tomb in Egypt

THE
STABIAN
STREET OF
POMPEII,
WHERE
THE
TOWN
HOUSES
AND
PALACES
OF THE
PATRICIANS
STOOD



not change in spite of a decreased volume of business, it is natural that the ratio between overhead and direct labor should change as the volume of business changes. When there is a lot of work, the overhead rate drops in spite of some increasing expenses. The rate will increase when work is scarce in spite of the decreasing expenses. The constant element in the overhead serves to lower the rate when orders are plenty and to raise the rate when they are scarce.

The purpose of distributing overhead to the various operations so carefully is twofold: (1) to see that this expenditure comes back in the form of revenue; (2) to see that each operation bears its share of the expense.

There has been no method of distribution devised, however, that will charge to each operation the exact amount of overhead expense that it incurs. For that reason it is best to strike an average and to distribute the expense on the

was only one of a number of interesting developments resulting from the explorations of our archaeologists. The two accompanying illustrations, for which we are indebted to the Cilliams' Service, enable us to visualize the art and luxury which characterized the work of the ancients. They did not build sky scrapers in those days but they did build magnificent temples and lavished great wealth on the decorations and furnishings. A large portion of these structures were built of brick, we were told. That is one thing the ancients knew and understood—that well-burned brick was the one indestructible building material.

The dealer connection is becoming a bigger factor right along in both the brick and hollow tile business, and those producers who look well to the development of this connection generally prosper well as a result.

Written for THE CLAY-WORKER.

GEORGIA SCHOOL OF CERAMICS.

ACCORDING to announcement made to the Atlanta representative of The Clay-Worker by B. Mifflin Hood, president of the B. Mifflin Hood Brick Co., the school of Ceramic Engineering to be established in connection with the Georgia School of Technology in Atlanta, secured sufficient support throughout the state that it has become an assured fact. The committee in charge of the matter, which is headed by Mr. Hood as chairman, has been conducting a state-wide campaign to obtain the \$25,000 necessary for the building of the school, its equipment, and for the first year's maintenance. This committee is composed principally of brick and clay products manufacturers and dealers throughout the state of Georgia, and these companies have donated most of the equipment that is needed in the laboratory and other parts of the school, and a large part of the building materials needed for the first unit. The money needed was largely obtained from public spirited citizens and manufacturers in the state, while the \$8,000 for the first year's maintenance of the school has been underwritten and guaranteed by one of the Atlanta newspapers.

a new concern recently formed in that city with a capital stock of \$25,000. Harry Forkel, of St. Petersburg, heads the new company.

A new company to establish a plant for the manufacture of brick and other burned clay products is being formed at Hamilton, Ga., by a group of business men of that place, though definite details of the proposed plant are not as yet available. Thomas Walker, of Hamilton, is actively engaged in forming the company.

The Benner Brick Co., of Carthage, N. C., a new southern company that was recently organized and incorporated with a capital stock of \$200,000, has obtained a large plant at Carthage with a capital stock of \$200,000, has obtained a large plant at Carthage, according to an announcement by B. H. Benner, president of the company, and is making extensive improvements. The capacity of the plant is also being enlarged to a production 20,000 bricks daily, and this is to be later increased, Mr. Benner states.

An order amounting to 2,000,000 common brick that are to be used in the construction of a new cotton mill plant at Canton, Ga. was announced recently by B. Mifflin Hood, of the B. Mifflin Hood Brick Co., of Atlanta, and is said to be one of the largest common brick orders for an individual



RESTORED
FORUM
OF THE
CITY OF
POMPEII
WHERE
THE
TEMPLES
AND
OTHER
PUBLIC
BUILDINGS
STOOD.

Just when work of building the school will start is not as yet known, but another meeting of the committee will probably be held in the near future to enter further into the details of the matter.

The purpose of this school will be to train Georgia boys in ceramic engineering, and to bring about the extensive development of the natural ceramic resources of the state. Georgia is said to rank fourth among the states of the Union in this regard, with extensive deposits of clay in various sections of the state that have proven highly satisfactory in tests made for brick manufacturing. Establishment of the school will make Georgia one of the largest clay products manufacturing states, it is believed, in the next few years.

Tile and similar clay products will be manufactured at St. Petersburg, Fla., by the Acme Tile Manufacturing Co.,

plant received in the southern field for some months. The brick will all be made at the various plants of the Hood Company in the Southeast.

The Pace Brick Co., has started operations at its plant at Albany, Ga., following recent purchase of the property from the Tift Silica Brick Co., of Tifton, Ga., by W. W. Pace, Jr., and associates. Extensive improvements have been made at the plant since its purchase, and the capacity increased to 30,000 bricks daily. The company owns a deposit of about 400 acres near Albany, said to contain one of the finest deposits of silica in the United States. Blended with lime this material makes a fine white brick.

According to word received recently from Peter Zechini, president of the Jellico Brick Corporation, of Jellico, Tenn., it is the plan of the company to extensively improve and

enlarge its plant during the coming year and greatly increase the present capacity. The plant was established only a little more than a year ago, and a steady increase in volume of business makes the enlargement necessary. Mr. Zechini states. Considerable new machinery will be installed and additional units established, according to the plans.

The W. M. Layton Brick Co., of Four Oaks, N. C., has leased the plant in that place of the Meadow Brick Co., and is now operating it, according to an announcement by W. W. Layton, president of the company. The Meadow Company is a comparatively new concern. The capacity of the Four Oaks plant is about 40,000 bricks daily.

A plant for the manufacture of brick and to represent an investment of about \$50,000, is to be constructed this year near Newberry, N. C., according to information received from L. A. Wilson, of that place, who is organizing the company to establish the plant. Definite details of the project will be later announced.

W. B. Neher, manager of the Alabama Brick & Tile Co., of Albany, Ala., announced the latter part of June that the company is installing several thousand dollars worth of new machinery in the plant and carrying out other improvements, that will serve to considerably increase the capacity when the work is finished.

The Yadkin Ceramic Co., was organized at New London, N. C., with a capital stock of \$50,000, and is planning the establishment at New London, of a plant for the manufacture of brick and general lines of burned clay products. The incorporators named are G. W. and Rufus Isenhour, and W. H. Meigs, all of New London, N. C.

C. W. Dixon, of the Columbus Brick & Tile Co., of Columbus, Ga., advises the Atlanta representative of The Clay-Worker that many brick and clay products manufacturers of the southern field will attend the conference to be held in October, at Washington, D. C., that has been arranged by the Department of Commerce to discuss the adoption and use of the standard size and weights of hollow building tile as recommended to the department by a special committee named to investigate the matter. Mr. Dixon was a member of this committee from the South, and states that further details of the conference are to be announced at a later date.

P. O. D.

THE BIG ROAD SHOW.

THE NEXT BIG convention and good roads show of the American Road Builders' Association is to be held with headquarters at the Congress Hotel the week beginning January 14th. The road show will be held in the Coliseum and the adjoining Greer Building. We are advised by S. T. Henry, Chairman of the Publicity Committee of the American Road Builders' Association, 37 W. 39th Street, New York City, that Mr. Charles Upham has been made manager of the Convention and Road Show. President Frank Page of the American Road Builders' Association, and Mr. Upham spent some time in Chicago recently making arrangements for the Convention and Road Show and they have been assured the co-operation of the Highway Industries Exhibitors' Association. Those interested in obtaining further details about plans for the coming big road show may address their inquiry to the American Road Building Association, 37 W. 39th Street, New York City, until local quarters are announced in Chicago.

Some good work is being done by the traffic men of organizations in holding in check a disposition on the part of the railroads to increase freight rates on clay products.

Written for THE CLAY-WORKER.

BRICK AND TILE EXPORTS SHOW INCREASE OF \$830,355 IN YEAR

Alfred T. Marks.

BRICK AND TILE export figures for the fiscal year ended June 30, 1923, now just available, show a tremendous increase over the corresponding year ended June 30, 1922. Not only is the total far beyond that for the preceding fiscal year, but our clay products are going to many more countries today than ever before.

A brief glance at the official figures covering our foreign sales of brick and tile for the two years named will show the lines having the greatest demand at present, and those which are registering the biggest increase. Following are the government's figures:

	Year ended June 30, '22	Year ended June 30, '23
Common brick and hollow tile.....	\$ 208,199	\$ 357,143
Fire clay brick	1,270,532	1,670,201
Other refractory brick	219,112	273,155
Refractory shapes	118,446	346,145

It will be noted that the total exports for the fiscal year just ended exceed those for the preceding year by \$830,355. It is predicted by well-informed foreign trade authorities, moreover, that the present fiscal year to end next June 30 will roll up a volume of brick and tile exports in excess of that for the past year.

Eleven countries on the western hemisphere and four European nations took our brick and tile products in the past fiscal year, whereas in the preceding year three overseas countries and seven in North and South America imported them.

As having an important bearing on our foreign sales of brick, it should be noted in passing that, with the possible exception of three countries, all of the South and Central American republics, have virtually abandoned the use of adobe for house-building purposes, and are more and more adopting brick. This means, of course, a steadily-increasing volume of trade in those countries—in fact, a ready-made market for our brick manufacturers if they care to cultivate it.

There is also developing in the nearby Central and South American countries, as well as Canada, a considerable demand for our brick-manufacturing machinery and general producing equipment, this trade in itself promising to grow into big proportions within the next few years.

The writer, in an effort to analyze the conditions which are responsible for putting our American brick and tile on the map of the western hemisphere so prominently, finds several plausible reasons therefor, and also discovers good ground upon which to base the prediction that within the next five years practically every country in North and South America will be using American clay products to a greater or less extent. That is the unmistakable trend today, with no obstacle in sight which would throw us off the main track leading to big and profitable business.

One big and impelling reason for the large increase noted above in our foreign sales of brick and tile is undoubtedly the fact that the markets of other countries, as well as their economic conditions, are rapidly becoming stabilized and able to buy in producing markets of their choice rather than being forced to confine their purchases to countries which do not meet their requirements and whose products do not compare favorably with the American goods from the quality viewpoint. This, however, is but one of the reasons.

The nations of the world, with but two or three exceptions,

have "gone to work." A reconstruction and rebuilding program is under way everywhere. Which means that American brick and tile are needed. And whether this resumption of activities consists in much-needed public utilities or in business developments generally, American brick must have their place in the general scheme of things.

Our greatest brick markets—and today's most promising clay products export field—are near home. Politically-backward Mexico is fast increasing its brick purchases of us, with a greatly enlarged demand promised in the immediate future, and the certainty that it will reach a large volume now that the United States has extended recognition to that country. It should be borne in mind that this is "next door" business, nearer to our Middle West brick manufacturers than is a good part of New England and the farther northwestern states; just across the line for our southwestern brick producers. And the market is ours, practically without competition and with no domestic production to buck against.

Canada, with its most marvelous development just at hand, even now a fast-developing market for our brick and brickmaking machinery, will eventually prove an outlet for an immense volume of United States brick and tile. The country, it is true, has some enterprising clay products manufacturers, but these take care of but a small fraction of the demand. The market, for the most part, is logically ours. Furthermore, our brick and tile generally are well received there and have a reputation for general excellence and superior quality.

Peculiar conditions which obtain in various parts of South America need a little study and investigation, so that our manufacturers can adjust themselves to the requirements and business customs of the people there (rather than expect them to adjust themselves to our ways and customs). This done—and there are evidences that we are earnestly setting about it—the field for our clay products there will be practically unlimited.

These are the real "home markets," logically and by right of contiguity ours to serve, and it but remains for us to properly and intelligently cultivate them.

HOLLOW TILE GROUP GATHERINGS.

THE TENTATIVE schedule of dates for meetings of the various groups of the Hollow Building Tile Association, as recently announced, is as follows:

Group 5 (Iowa, Minnesota, South Dakota, Nebraska, North Dakota), October 9.

Group 3 (Indiana, Illinois, Wisconsin), October 3.

Group 2 (Ohio, West Virginia, Michigan), October 9.

Group 6 (Kansas, Missouri, Oklahoma), October 11.

Group 1 (New York, Pennsylvania, New Jersey and New England), October 17.

Group 4 (Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida), October 18.

Group 7 (Texas, Arkansas, Louisiana), October 4.

IOWA SURVEY REPORT.

VOLUME 28 of the annual reports for 1917-1918 of the Geological Survey of Iowa with accompanying papers is a rather ponderous publication of nearly 600 pages published by the State of Iowa at Des Moines, Ia., and prepared by G. A. Kay, State Geologist, and James H. Lees, Assistant State Geologist. The report lists and reviews at great length minerally production and resources of Iowa, in which clay

products play an important part, showing up greater in value than cement or any other mineral product except coal. The total value of mineral products in Iowa has risen from a little more than 20 million dollars in 1909 to close to 40 million at the present time. And though coal is the leading item in value, the record shows good progress in both clay products and cement.

A BRAZIL CLAYWORKER MAKES A STUDY OF AMERICAN METHODS.

A REPRESENTATIVE of the Company Constructora en Cimento Armado, one of the leading brickmaking concerns of Brazil, South America, Mr. Mario Fred Hasselmann, has spent the summer in the United States investigating and studying the methods of brick and tile manufacture in this country. He writes he is now returning to Rio Janeiro and wishes to thank The Clay-Worker and the men in the brick and ceramic field who have generally aided him in his studies and research work. He sailed for home Sept. 15th on



Mario Fred Hasselmann, Rio de Janeiro, Brazil.

the steamship Pan-America, and expects on his return to install a line of improved machinery and other equipment for the manufacture of brick, hollow tile and other clay products. His home address is Caixa Postal 1546, Rio de Janeiro, Brazil, South America.

"THE HOME FIRES."

THE AMERICAN Face Brick Association did a splendid bit of work which will help promote the real home life as well as a wider use of face brick when it got out that publication entitled "The Home Fires," made up of both pictorial and text suggestions for the use of face brick in fire places. The fire place is the true earmark of the home, and one good way to keep this in mind and promote interest is through specific designs suggesting attractive fire places. That is what this publication is, a sort of plan book on fire places specifically, and it is one that should be widely circulated and effectively used. Not only should face brick manufacturers purchase and use quantities, but the dealers throughout the country should take an active hand in enlarging the circulation of this splendid fire place plan book, copies of which can be had for 50 cents from the American Face Brick Association, 130 North Wells Street, Chicago.

Written for THE CLAY-WORKER.

MASONRY SCHOOL PROGRESS

WITH THE BEGINNING of the new school year there is both satisfaction and future promise in reports which indicate real progress toward a definite well-directed and uniform schooling system to provide bricklayers and masons for future needs.

There has been for ten or fifteen years some interest in the subject of trade and vocational schools specifically for bricklayers, and there is no doubt but what each and all of these efforts have been helpful. There have been things lacking, however, that steps are now taken to provide. Among those things are specific schooling and training courses made uniform throughout the country, and a broad general and co-ordinated interest instead of local effort. The feeling of the need for specific schooling and something to replace the old apprentice system was one thing and fulfilling that need was something else and a different thing. There was no precedent to go by, no text books or proven and accepted course of training. And there was not the same interest on the part of youngsters to take up the calling of masonry as has been evinced since the wide publication by the newspapers of high wages paid bricklayers. Now there is an awakened interest and desire which promises to provide the youngsters for schooling, which is the first essential to making real progress. Now comes specific plans for schooling, and right here it is desired to borrow a page from the Bulletin Reports of the National Hollow Building Tile Association, which tells something of the efforts in this line and the progress that is being made. The page in question is as follows:

"Masons' School—Page 2:

"Following the conference held in Cleveland June 6, and pursuant to certain resolutions adopted, the various committees were appointed and the work in promoting the Masons' schools is rapidly progressing.

"At the present time, correspondence is being conducted with the organizations of material manufacturers and the national employing groups relative to financial support in carrying out the plan. Sufficient co-operation has already been pledged to guarantee the carrying out of the plan.

"Briefly, the report adopted by the committee sets up these facts:

"(1) That the old system of apprenticeship training in the mason's trade has failed to provide the craft with a sufficient number of men to replenish the ranks and meet present-day demands for mechanics;

"(2) That the type of training which promises greatest efficiency is that conducted through the boards of education with full co-operation of employers and employees;

"(3) That a national director should be employed, whose duty it will be to call together in the various localities, where apprenticeship training is needed, all of the elements interested in the movement, including employers, employees, school authorities, material manufacturers, and dealers; and get definite pledge of the full support of all elements and assurance on the part of employers that the students accepted for training will be indentured during the period of their scholarship, and to give his help in getting the schools under way;

"(4) That the bricklayers' union will accept into membership, and aid in finding employment for any man who is capable of doing a satisfactory job of bricklaying, regardless of the place, period or method of his training;

"(5) That in the training of masons, there is a place

for trade schools giving instruction to men beyond the age limit accepted in the public school classes.

"Upon the endorsement of this report by the committee, Professor H. L. Briggs, Director of Vocational Training of the Cleveland Public Schools, was engaged to write a text book. He has been actively engaged in this work for the past six weeks and expects to have the text ready to be submitted to the various groups for their approval before the end of this year.

"Copy is being written for literature describing the plan of training and giving definite instructions how the plan may be set in operation in any community. This literature is to be sent to all who ask for information regarding the plan and will give in detail the steps to be taken in their proper order.

"Copy is also being prepared for a small booklet for wide distribution through contractors' associations and schools to young men with a view of interesting them in the mason's craft."

As stated above, the clayworking fraternity has been interested in the subject of schools for training more bricklayers for a number of years. The interest here, though selfish, is wholesome, and is for the public good as well as for the future welfare of the clayworking industry. No argument should be needed to convince either makers of brick or of hollow building tile that trade expansion in the future depends largely on having workmen to lay up brick and hollow tile. These clay products are not like some other products for public consumption. For the public to get the use of them, there must be skilled men to fabricate them into specific structures and it is to supply this need that we feel the call for specific training schools.

The duty of the clayworking industry today in its own interests is not only to give moral support and personal co-operation in organizing and carrying on these schools, but individually and as a whole through organization members the industry must back these undertakings up financially. As is shown by the Bulletin Reports just quoted, good progress is being made along proper lines, and this should be encouraged and kept going by the clayworking industry backing up the efforts with whatever financial assistance is needed.

Plainly we are making good progress in masonry schools, and plainly, too, a continuation of this progress is essential to the future welfare and development of the clayworking industry. Therefore the efforts should have the active support of every manufacturer of clay products which goes for structural uses, and that both morally and financially.

CERAMIC SCHOOL AT GOUDA, HOLLAND.

OWING TO THE STEADY development of the Ceramic industry in Holland, which includes the manufacture of general and artistic earthenware, sanitary porcelain, tile and brickmaking and refractory products, etc., the Dutch government has established a ceramic school at Gouda for the purpose of giving lectures to students, manufacturers and managers interested in the pottery industries. In conjunction with these, technical lectures and teaching practical work can be carried out in the laboratories which are equipped for the testing of raw materials and other products.

There is also a consulting office open to anyone wishing to introduce alterations and improvements in their factories, where expert advice can be given and trials made. The technical school is equipped with grinding machinery, tile presses, lathes, air compressors, gas and coke muffles, frit

kiln, electrical ovens, spraying cans, drying apparatus, apparatus for testing the different products.

Mr. Frederik Regout, the well known ceramist, is at the head of the institution, supported by qualified assistants. The institution is open to all foreigners, who may attend the lectures and do practical work. The course of instruction will begin September next.

All inquiries should be addressed to Mr. Frederik Regout, at the Rijksschool Voor Klei—En Aardewerk Industrie, at Gouda, Holland.

THE ART OF MANUFACTURE AND THE MANUFACTURE OF ART.

Charles F. Binns, Alfred, N. Y.

Address Delivered Before American Ceramic Society, Feb. 12, 1923—Released by Publication Committee for Publication.

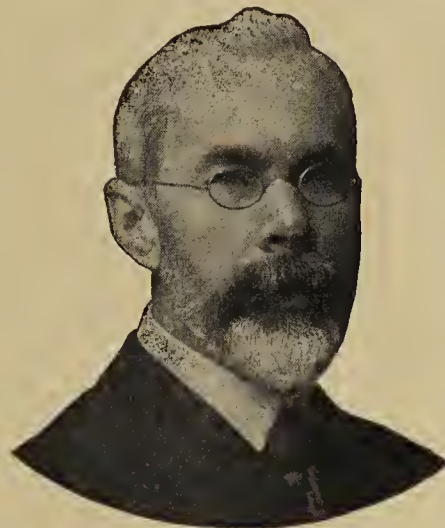
IN ALICE IN WONDERLAND, Humpty Dumpty says that when he makes a word do a lot of work, he always pays it extra. Under such an arrangement as this the word "Art" must be almost ready to retire on a competency and I, for one, wish it would. Few words have been used with a wider meaning and with less intelligence. The use has ranged from art pottery to tonsorial artist and I am not sure but that the second application is more pleasing than the first. The extensive use of the term makes it necessary to limit or define the sense in which it is to be understood. We are not speaking of the fine arts, painting, sculpture and architecture, nor of the arts and crafts with their connotation of dilettantism and bric a brac. Rather let us think of art as expressing the applied skill of the conscientious worker whether in plastic form, color or line, for it is in these that the ceramic worker expresses himself and makes his appeal for understanding and acceptance. It will not do to fool ourselves and imagine that we possess that which in fact we have not. No progress can be made unless the true condition is realized and candidly faced. We Americans like to believe that we can do anything that any other people can do but this is not always true. We are still confronted by large importations of wares which, rightly or wrongly are esteemed by the purchasing public as being of higher quality than the domestic product. We must therefore ask ourselves, and must insist upon straightforward answers; first, whether we are manufacturing wares which are in fact equal to these, that is, whether the alleged superiority of imported wares is imaginary or real and, second, whether we are really interested in producing such wares or are content to go on as we now are, admitting the superiority of the foreign goods but willing to admit it and satisfied if only we can sell, if not an inferior, yet a less ambitious product by the carload.

I do not intend to discuss the strictly decorative wares or tile or scheme goods or anything but the regular table wares of the household. As the matter now stands, we are manufacturing enormous quantities of general ware which is for the most part decorated as open stock patterns. This idea has a potent charm for the manufacturer and the dealer. It has its conveniences also for the consumer who can at any time replace losses without difficulty but it does not make for the excellence which resides in individuality. It affords but little opportunity for the expression of personality in design and denies a place to the fine quality which appeals to the discriminating purchaser. The production of open stock patterns may and probably does present the simplest and most profitable plan for running a large manufactory but the unfortunate result is that it predetermines and stereotypes methods so that the introduction of anything different, even if superior becomes, if not impossible, exceedingly inconvenient. Let me not be understood as condemning the open

stock pattern. There is no reason whatever why good designs should not be set forth in this way and there are good open stock patterns both domestic and imported on the market. The point of my criticism lies in the acceptance of mass production as the most desirable and even the only profitable plan. It lays stress upon convenience and economy rather than upon quality and yet it should be made clear that a good design does not necessarily cost more to reproduce than a bad one.

If my observation has been correct and representative, it tends to show that very few of those who are charged with the production of decorations have had any training in the principles of design. Indeed very many patterns speak for themselves. They do not satisfy a discriminating taste. Of course, the answer may be that they are not meant to; they are produced for the multitude and must be inexpensive so that the multitude may buy largely. That may be all right if this is our only aim except that it may be added that there is discriminating taste even in the multitude but if we have no other purpose we must not cavil at imported wares.

In opposition it may be argued that the possibility of purchasing abundant supplies of decalcomania prints has relieved the manufacturer from the necessity of employing a designer, but as a matter of fact, the offering of these prints has placed or should place the burden of selective taste upon the buyer or purchasing agent. Too often, apparently, designs are prepared and prints selected for no other reason than that they can be used by the transferrer equally well on every shape



Prof. Charles F. Binns, Alfred, N. Y.

and without calling for any skill except a rapid dextrous fingering. As a matter of fact, we have forsaken the art of manufacture and have become ensnared by the subtle wiles of the manufacture of art.

But art is essentially individual. If it means anything at all it means the expression of an idea but mass production tends to destroy this. The criterion of fine workmanship is merged in the satisfaction of the manufacturer in seeing that his wares in their passage through the workrooms are all going one way.

If the truth must be told, we have become impatient of taking pains. We are devoted to automatic machinery and the more nearly our employes approach automata the better we are pleased. To some of us the ideal method of making dishes would be a series of endless belts, the work people in long rows each adding a touch to the passing pieces until they are delivered complete to a continuous kiln and from this to the packer.

I am fully aware that the producer of these wares denies that he has any mandate to educate the public and as long as his product finds a ready market he is satisfied. But we cannot remain indefinitely under the protection of a high tariff. Sooner or later we will be compelled to market our wares upon merit and without fear of foreign competition and we shall be wise if we take counsel and look ahead. The Art Division of this Society believes in preparedness. It

aims at placing in every manufactory some person, man or woman, who has undergone a regular training in design and the harmony of color, who is able to judge between good and bad workmanship, who has authority to decide upon the production and selection of decorations and whose aim is the establishment of the product upon a plane which will reflect credit upon the producer and will appeal to the discrimination of the purchaser.

Two objections, more or less valid, may be advanced against this course; first, a person placed in such a position would probably, in our democratic passion for titles, be styled Art Director and would be classed as a non-producer and, second, in consequence of this the expense would be considered as an addition to overhead. Without presuming to dictate to the management of any plant I think we are wrong in regarding a designer as a non-producer and one who selects designs must be at least a potential designer. And further, there is no reason why such a person should not actually produce designs, to be wrought out, if the factory has no department of lithography, by a commercial house. This plan would also have the advantage of providing exclusive decoration. There is a conspicuous lack of individuality in our table wares. Each important European factory has a style of its own and it is not difficult to recognize its product but I do not think that this can be said of us. Back of this there is the important factor of esprit de corps and pride of product. The whole staff should work together in attaining and maintaining an ideal but this is only possible where there is a controlling mind trained to discriminate and to advise. It has of course occurred to you already that persons trained for such work are not at present available and I regret to admit that this is to a large extent true but once let it be known that here is a demand for them and there is no doubt that the supply will be forthcoming. It is of course necessary that anyone undertaking this work should be familiar with the methods of production. This has so far seemed to be the imperative thing that in nearly every case where a superintendent of decoration has been employed the choice has fallen upon a member of the decorating staff. If this is to be the accepted method the person so chosen should be sent to an established school for a thorough course in drawing and design but I venture to think that it is easier to drill a trained designer in the technique of the factory than to teach the sound principles of design to one who has learned his trade at the bench. As I do not want to present a one sided discussion I will state the opposite view that one who has been brought up in the atmosphere of the work room can be and usually is selected because of a certain power in dealing with other workers. This is a very important qualification and is difficult but I think not impossible to acquire.

I am not expecting that these ideas will be received with enthusiasm nor that immediate results can be secured. I am trying to look ahead and I ask you to share the vision. There does not seem to be any good reason why a given manufacturer should not select one or two promising young persons and provide for them the necessary training. There are probably local schools of design to which such persons could be sent or if not, it would surely be possible for manufacturers to combine to organize such a school. I recall the potent influence which has been exercised by the Burslem Art School in Staffordshire and by the Lambeth School upon the Doulton Wares.

The whole matter harks back to the question with which we began our discussion. Do we care? Are we satisfied? If the Art Division means anything at all it means that the Society which gave it birth and which is endeavoring to foster it, believes that it has a part to play and that part can be nothing else than to stimulate and promote the development and if necessary the improvement of our product.

It should be feasible for anyone in control of a properly equipped manufactory to create a small department for the express purpose of producing fine wares. Even without any change in body, glaze or fire a great deal could be done and when the first step was taken numerous possibilities would present themselves. It is not likely that such a venture

would at first be profitable in cash but it might be made the means of establishing a reputation and anyway it would afford a whole lot of fun. "Oh well," you say, "we are not in business for fun; we would not be here at all if we did not make money." But I say to you that the man who sticks in his office only long enough to make money enough to have time enough to get away to the country club to play golf is not the successful man. He says in effect, "this job of mine is not a life it is only a living." "If I can make it profitable I will get my fun outside of it." The fact is that if a man does not get any fun out of his daily work he should hunt another job for the life is more than meat.

We cannot stand still and I repeat that we must not deceive ourselves by the bold advertisement of an advance which is only imaginary. Judging ourselves and comparing ourselves among ourselves is no more wise in manufacture than in behavior. Let us at least select the very best examples than can be procured and set them before our operatives, not to be copied but as an illustration of the qualities which are acknowledged to be of the highest class and to which we hope and expect to attain.

LOCAL ADVERTISING

AT A RECENT group gathering of hollow building tile manufacturers at Atlanta, Ga., one of the feature subjects under discussion was that of local advertising by individual manufacturers. It was urged that the members spend the 10 cents a ton reduction in dues for local advertising, and it was said that those who have experimented along this line have gotten wonderful results in the way of increase in sales. Also in the bulletin reports of this group meeting the secretary of the Hollow Building Tile Association promises help and co-operation on the part of the association with any and every member desiring to put on a campaign of local advertising.

There is a story told about some mail order business that very fittingly illustrates one phase of local advertising. It seems a merchant met a local citizen going from the post office with some merchandise he had received parcel post, that he had bought from a mail order house. The merchant chided the customer about sending away his money and asked why he didn't come to the local merchant to buy what he needed.

The citizen, in reply, told the local merchant that he ought to patronize his home paper and set forth in advertising the fact that he had this merchandise in stock. He said he had read the local paper and did not see any advertising of the merchandise in question, but he had read it in the catalog of the mail order house and that was why he ordered it.

There is no mail order business in the hollow building tile as a merchandising proposition, but there is good reasoning here in the matter of patronizing your home paper to keep your home folks informed of the fact that you have a building material. Along with it you should tell them of the wide range of uses and stimulate interest which will lead to trade development.

Clay products being a comparatively heavy item, must to some extent be localized in their distribution because of the item of cost in shipping over long distance. It is true that hollow building tile may be shipped over a fairly wide territory, but this does not alter the fact that the more trade you can develop nearer home, the better it will be both for you and for the home builders, because you will effect a saving in freight which will be an item of importance in the cost of building. At the same time you will lessen the friction of sharp competition between other producers by staying near home, and if they do the same thing this will be a big factor in helping stabilize prices and in making it practical for each man to get a fair profit out of his business.

Local advertising can be made a big influence in the up-

building of nearby trade, and if enough eugage in local advertising all over the country, the sum total of this will be more effective than a group campaign of general advertising. Wide spread advertising in the big magazines of general distribution is a splendid thing, but it is not the whole thing by any means. There are in every locality opportunities to do effective work and increase the volume of consumption by good local advertising. And the official and active workers of the National Hollow Building Tile Association are right in persistently advocating more local advertising by the members in their own community. In encouraging this and cooperating to help make it effective, the association is doing splendid constructive work.

DRYING BRICK THOROUGHLY IN TWENTY-FOUR HOURS.

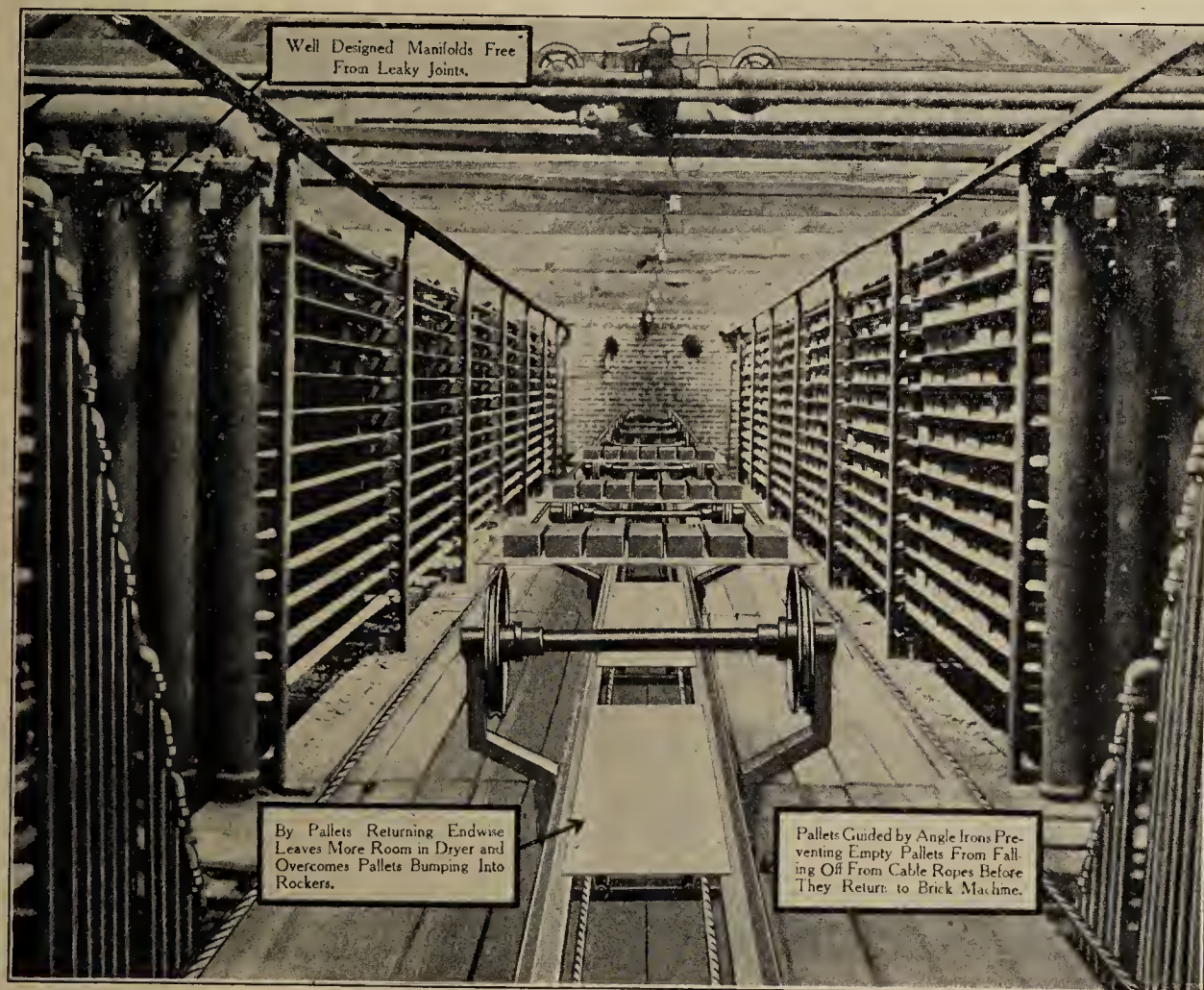
IF THE READER will scan the accompanying illustration carefully he will not fail to note the perfect condition of the brick as they are carried in the pallets from the machine to dryer and on to the kiln.

This is one of the secrets of making high grade common

less cost, and yet produce first quality of brick. By the Wellington process of making and drying brick these results are assured as is attested by the plants where the Wellington system is in operation. The dryer system is carefully designed and erected in a manner to insure the best results. The manifolds are free from leaky joints thus avoiding what is a serious trouble, when such defects in construction occur.

By the Wellington system the brick are handled on pallets automatically. The brick are not marred while being conveyed from the machine to kiln and the work is done with the minimum of labor and attention. By this process it is claimed the brick are dried perfectly in less than twenty-four hours. The work is done by gravity, and automatic conveyors with the minimum labor. Loaded pallets are delivered to the dryer and the empty pallets returned to the machine in an orderly manner that prevents wear and tear incident to the rough handling to either brick or pallets.

As will be seen by referring to page 306 of this issue The Wellington Machine Co. offer the trade automatic brick machinery and brick yard supplies of all character, including disintegrators, granulators, pug-mills, elevators, clay cars,



Drying Brick by the Wellington System.

building brick. The secret of drying brick thoroughly, quickly and with little or no man-handling is very important, for if brick are carefully dried and free from defects due to handling they will come from the kiln the same straight, true, perfect brick and such brick bring a higher price in the market than those that are carelessly made and roughly handled.

It is quite an achievement in the art of brickmaking to produce brick with less labor, less handling and consequently

barrows, molds, etc., etc. Write them for illustrated catalogue and full particulars as to daily capacity desired, etc., mentioning The Clay-Worker.

Why not seek to impress the railroads that clay products furnish enough railway tonnage to be entitled to some special attention in designing and constructing new cars that will best serve the needs of this industry.

THE SUITABILITY OF THE TUNNEL KILN FOR BURNING REFRACTORIES.

By A. F. Greaves-Walker and S. M. Kier.¹

THE FINAL REPORT of the Committee on Fuel Conservation on Tunnel Kilns has been delayed longer than expected due to the desire to gather all data possible, especially from European sources, but principally because it was desired, if possible, to have some practical burning tests made on silica brick. As all efforts in this direction have failed, the Committee has decided to submit the following report of the work accomplished and their conclusions.

Since issuing the preliminary report² the Committee has visited one plant operating a tunnel kiln burning refractories. This kiln is located at the plant of the Ohio Valley Clay Company, Steubenville, Ohio, and is a Dressler.

The kiln is 303 feet 6 inches long and the cross section approximately 4 by 6 feet. It will hold 47 cars each 6 feet long.

Natural gas is used for burning and cone 2 is hooked in center of cars. The entering air has a temperature of 200°F and the exit air 250°F. The maximum charging rate is 2 hours.

The high heat zone is 75 feet long. The lining throughout is Mt. Savage fire brick. Repairs have been very low during the five years of operation, the kiln having been built in 1917-18. The approximate cost was \$120,000 at a period of high costs.

The car repairs have been very low. Refractory car tops last approximately one year.

This kiln is used exclusively for the burning of fire clay shapes, many of which are large and would be classed as difficult. This accounts for the 94-hour burning time. It is practically impossible to figure the capacity of this kiln in 9 inches equivalent or to compare its output with that of the average fire brick plant.

It is safe to say, however, that no more difficult ware is made on any refractories plant in the world and as the losses are practically nil it may be assumed that any type of product made of flint clay—calcine—bond clay mixtures could be handled safely under the same conditions.

Investigation of the European situation reveals the fact that the Germans and French consider the tunnel kiln as perfectly successful for burning fire clay refractories of any type or kind. Installations are numbered by the dozens. This has naturally led to an attempt to develop kilns for burning silica, magnesite and chrome.

There are, at the present time, two kilns being operated on silica brick entirely and two under construction as a result of the success of the first two.

The operating kilns are at the plant of Dr. Otto and Company at Bendorf, Rhein and are known as Otto kilns. Dr. Otto is the well known by-product coke oven builder and operates his own refractories plants.

The first Otto kiln was started in 1913 and was originally 100 meters long. This was found to be too short and it was extended from time to time, principally on the cooling end until in 1919 it had reached a length of 160 meters or 528 feet. A second kiln was built in 1921 of this same length which would indicate that the first was successful.

These kilns are burning silica brick and shapes used almost exclusively in coke oven construction, made from West-erwald quartzite and burned to cone 14. The West-erwald quartzite is a flint or chert and of an entirely different type from those of Pennsylvania and Wisconsin.

An attempt has been made to keep the results obtained from these kilns secret and as a result details are not obtainable. It is known, however, that the product is going into coke ovens and that laboratory tests show the brick to be equal to those burned in down-draft kilns. It is interesting to note that these kilns are operated with producer gas without preheating.

Conclusions.

From the investigations made the Committee feels safe in concluding that the tunnel kiln has been developed to a point where it will burn fire clay refractories of any type equally as well as down-draft kilns. These conclusions are based on the results being obtained on the Didier-March, Farber and Ohio Valley kilns and on tests on refractory products in the Champion Porcelain Company's kiln at Detroit, which is operating at cone 18. We have also the results obtained on European operations over a long period of years. It would, of course, be necessary to design a kiln especially for each operation after careful tests of the raw material and mixes and the establishment of a burning curve.

As to the question between the muffle and open type kilns, it is the Committee's conclusion that the open type will burn any fire clay refractories successfully that can be burned in the muffle type and vice versa. First cost would, therefore, naturally govern in the selection.

The question of capacity is an important one. No kiln, as far as the Committee can learn, has been built which produces over 18,000 9-inch equivalent per 24 hours. This is not considered the limit, however, in the present stage of development. From observation of kilns burning other products it is believed that kilns could be built that would successfully burn from 30,000 to 32,000 per 24 hours at cone 12 to 14. It is very largely a question of total length of kiln, length of high fire zone, fuel used, and method of burning fuel.

In order to produce 32,000 9-inch brick per 24 hours burned at cone 12 the following general specifications would apply.

Length of Kiln—360 ft.	Time of burning—72 hours
Car 7' 6" long	$72 \div 48 = 1\frac{1}{2}$ hours charging rate
360	$24 \div 1.5 = 16$ cars per day
— = 48 cars in kiln	2000 brick to car $\times 16 = 3200$ brick
7.5	per day

This is, of course, entirely theoretical, but several recognized kiln engineers, who have been consulted, agree that the 30,000 capacity kiln is now possible.

As to the feasibility of successfully burning silica refractories in tunnel kilns the Committee thinks that it is possible. It is being done in Europe although at lower temperatures. As was to be expected the problem was one of cooling rather than one of heating up and burning. Cone 18-20 temperatures, do however, present a problem when a large output of product is required. The burning of silica brick is not only a question of bond, but one of inversion which introduces a time factor. It requires exposure to a certain temperature for a certain length of time to produce a commercial silica brick and the only way in which this period can be shortened is to use higher temperatures. For this reason brick now being burned at cone 18 would have to be burned at cone 20 if the burning time was reduced. To produce the necessary volume of heat to burn any considerable number of silica brick would require either a long burning zone or regenerators, which means high construction costs. Furthermore, the inversion points during the cooling period must be taken into consideration in the kiln design.

¹ Presented at the Tenth Annual Meeting of the Refractories Manufacturers Association, March 23, 1923, New York City.

² See Preliminary Report of the Committee on Fuel Conservation on the Railroad Tunnel Kiln, Jour. Amer. Ceram. Soc., 5 [9], 602 (1922).

On account of the size of the average silica brick plant in this country it is not practical to consider a kiln which would produce less than 24,000 9-inch equivalent per day. This is relatively a small unit, but it is questionable whether a tunnel kiln of the standard design could be economically built and operated, which would have larger capacity.

The theoretical specifications for a 24,000 capacity kiln would be as follows:

Length 540 feet	Burning time 6 days=144 hours
Cross section 5 ft. X 6 ft. effective	144
Car 7½ feet long	—= 2 hour charging rate
540	72
—= 72 cars	24
7.5	2
	2000 brick to car X 12 = 24000 brick per day

It is of course, possible that a much larger output could be obtained by building a longer kiln and charging cars at one hour periods, but the car capacity would have to be reduced to 1,500 brick or less.

Such a kiln would theoretically have to be 715 feet long and would produce from 30,000 to 35,000 9-inch per day.

The burning curve on such a kiln would be as follows:

Advance	Drop
40 hours at 20° per hour	7 hours at 20° per hour
19 hours at 65° per hour	13 hours at 123° per hour
18 hours at 20° per hour	15 hours at 40° per hour
	4 hours at 20° per hour
77 hours	39 hours

Total 116 hours

A much shorter kiln could be used and the capacity probably increased by making use of the regenerative principle. Designs for such a kiln have been submitted to the Committee and have received very favorable consideration. In this kiln two lines of cars moving in opposite directions are burning at the same time and the use of regenerators makes it possible to build up temperatures in a manner impossible in the standard design. This kiln being designed on entirely new principles, so far as the tunnel kiln is concerned, it is impossible for the Committee to say more than that it is worth the consideration of those interested.

The question of the best fuel to use in connection with a tunnel kiln burning refractories has been given consideration.

In Europe producer gas is used almost exclusively. This is probably due to the possibility of using low grade fuels, such as brown coal, in this manner. Experience in this country also indicates that producer gas is entirely successful.

Producer gas has some disadvantages, however. The deposit of tar and soot in the flue system makes it necessary either to build a double flue system or shut the kiln down and "burn out" periodically. "Burning out" may be necessary every six days or only every thirty days according to the fuel used and the method of operating the producer. The operation requires from 2 to 6 hours depending on the deposit and length of flue system. This is not a serious disadvantage.

A new system recently developed by the Cottrell Company may successfully solve the problem of soot and tar in producer gas. In this system these troublesome ingredients are precipitated electrically and the gas passes through the flue perfectly clean. This would reduce its heating value somewhat unless the precipitated soot and tar could be returned to the producer.

Another disadvantage which may or may not be serious according to the raw material used is that reducing conditions obtain unless special attention is paid to preventing them.

With the application of stokers to tunnel kilns the use of coal has become very efficient and the question of handling it made easy. Methods of using preheated air for secondary combustion have been devised which also adds to the efficiency of coal fuel although this applies equally to producer gas.

It appears that the question of fuels is largely a matter of personal choice. Little need be said about the fuel saving advantages of the tunnel kiln. Other industries have found that they can wipe out their old burning systems and replace them with profit. The report on one tunnel kiln which went under fire six months ago and which cost \$50,000 to build, showed that their saving on fuel alone the first year would amount to \$60,000. As the percentage saving on fuel would be the same in one industry as another, it is logical to presume that the refractories' industry would average a saving of at least 75 per cent.

WHY BRICKYARDS ARE IDLE.

Manufacturer Blames the War and the Inability to Get Credit.

In The New York Times of Aug. 15 was published a letter, signed J. Arthur Hally, in which he says:

"I can show you brickyards with ample supplies all over New York State, Connecticut and New Jersey, * * * all of which are standing idle or being worked half-heartedly because they do not get enough for their product to make it worth while to operate."

The reason why, he says, is because "the big operators control the situation. * * *"

I hesitate to mix, if only a little bit, into this awful mess of things which Mr. Hally says exists, yet with an experience in the brick business in New York City of upward of fifty years, I assure Mr. Hally that the person with bricks to sell is as free to sell them here as a person can be free. Bricks are being manufactured in the States named by Mr. Hally and are being marketed in this city, and all is being done that experienced manufacturers can do, under conditions prevailing at the yards, to produce in quantity to supply the demand.

It is true many plants are idle, but the reasons are not hard to find. A business with a prospect of profit and continuance will not be abandoned without cause. During the war the manufacture of brick was practically stopped by the Government as "non-essential," while building also declined. Thus, with no market for their goods, brick manufacturers found their occupation gone, brick plants being idle. To restore these yards a large expenditure of money was necessary, which was lacking when the demand for brick came with resumption of building. Then, when loans might have been negotiated for the restoration and development, came attacks upon those who had remained in the manufacturing business, and timidity of capital to lend to a business which might not be able to resume after refitting kept, and continues to keep, many of the abandoned plants idle.

WILLIAM K. HAMMOND.

New York, Aug. 29, 1923.

New York Times.

MASONRY TEST BULLETIN.

BULLETIN No. 2 of the Department of Civil Engineering, Columbia University, in the City of New York, gives record of comparative tests of clay, sandlime and concrete brick masonry. The work covers about sixty pages and constitutes an illustrated and charted report of pier tests of masonry and is a good contribution to the technical literature on this subject.



THE USE OF VITRIFIED CLAY PIPE IN PLUMBING SYSTEMS.

By Lewis Morgan, Salisbury, Md.

A MANUFACTURED ARTICLE that will attract the public's attention to any great extent must be cheap and at the same time be a quality article. Vitrified clay pipe stands the test for both of these requirements; first, being cheaper than any other pipe used in the plumbing trade, and second, being the only sewer pipe which will stand the ravages of time and corrosion. A third reason for the use of vitrified clay pipe is the ease with which it can be handled in comparison with other pipes.

Septic Tanks.

Vitrified clay pipe can be used in the construction of a small one house cesspool or septic tank made of thirty-six inch clay pipe. Two tanks are built up of four lengths, each, of thirty-six inch pipe with two lengths of each tank having a four inch outlet, and a smaller tank make up of two lengths of thirty-six inch pipe, one length being a thirty-six by four inch cross. The working of this septic tank will be made clearer by referring to drawing, which shows the water entering into one of the large tanks, being vented just previous to entering, and being equalized by a connecting pipe in one of the lower lengths by a four inch connecting line. This allows the solid matter to settle to the bottom, which has been cemented solid, and any surplus water will pass into the smaller tank, first being vented, and from this place, the water will syphon out when it has reached a previously determined height. This water, which will ordinarily be in small amounts, can be distributed over a small area of ground by a system which will be explained in the next paragraph. Each of these tanks has removable tops in order that they can be cleaned out if necessary.

Distributing System.

In distributing the excess water from a large cesspool or septic tank the water is generally taken out of the large tank with a six inch pipe from two separate openings in the tank and is run in opposite directions. At certain intervals varying from six to twenty feet according to the nature of the soil, four inch Y branches are placed in the main six inch pipe and from these Y branches lines of four inch pipe are carried out to any distance desired. In laying this pipe, no joint material is used in order that the water may gradually run through the cracks into the soil. In order to prevent the soil from getting into the pipe, pebbles or

stones are put under the joints and a piece of tar paper is placed over the top. This method of getting rid of the sewer water is generally used unless a river or some natural drain is close at hand in which case the water may be piped with joints sealed, to the desired location.

Street Sewers.

The main street sewers are generally laid under the supervision of the town or city surveyor and this fact helps to insure the correct laying of the pipes. These pipes are distributed throughout the city getting gradually larger as they reach their destination with a manhole at every important connection, for the purpose of cleaning out the sewer if necessary. The water is either run into a natural drain, as a river, or into a special built sewerage disposal plant from which place it is gotten rid of by several different methods. A great deal of unjust blame has been placed on the sewers of vitrified clay pipe because of frequent stoppage when in reality the town has perhaps doubled the number of taps which the pipe should have or else they have connected the street sewers into it and the leaves, mud and dirt allowed to pass into it stopping it up.

French Drains.

French or sub-soil drains are laid under the basement floor or around the bottom of the footings of the outside foundation walls for the purpose of carrying off water accumulating from rain and other causes. The pipe used for this work does not generally have hubs and if hub pipe is used the hubs should not be cemented. This pipe is laid similar to the pipe used for the carrying off of septic tank water, having some stones under each joint and a piece of tar paper over each joint to keep out the sand. Around and above this pipe broken stone is placed to allow the water to reach the pipe, after which a layer of straw and then earth is placed on top. A clearer idea of this may be gotten by referring to drawing No. 2. This water being lower than the regular sewer cannot empty into it directly and must be either carried to a lower point and discharged or else carried to a special built cement pit constructed for this purpose. The water may be pumped from this pit into the main sewer by means of a cellar drainer.

Rain Water.

In carrying away the water from the roof the water is generally conveyed from the roof by means of metal leaders which empty into vitrified clay pipe and is carried, either by a separate storm sewer or with the house sewer, into the

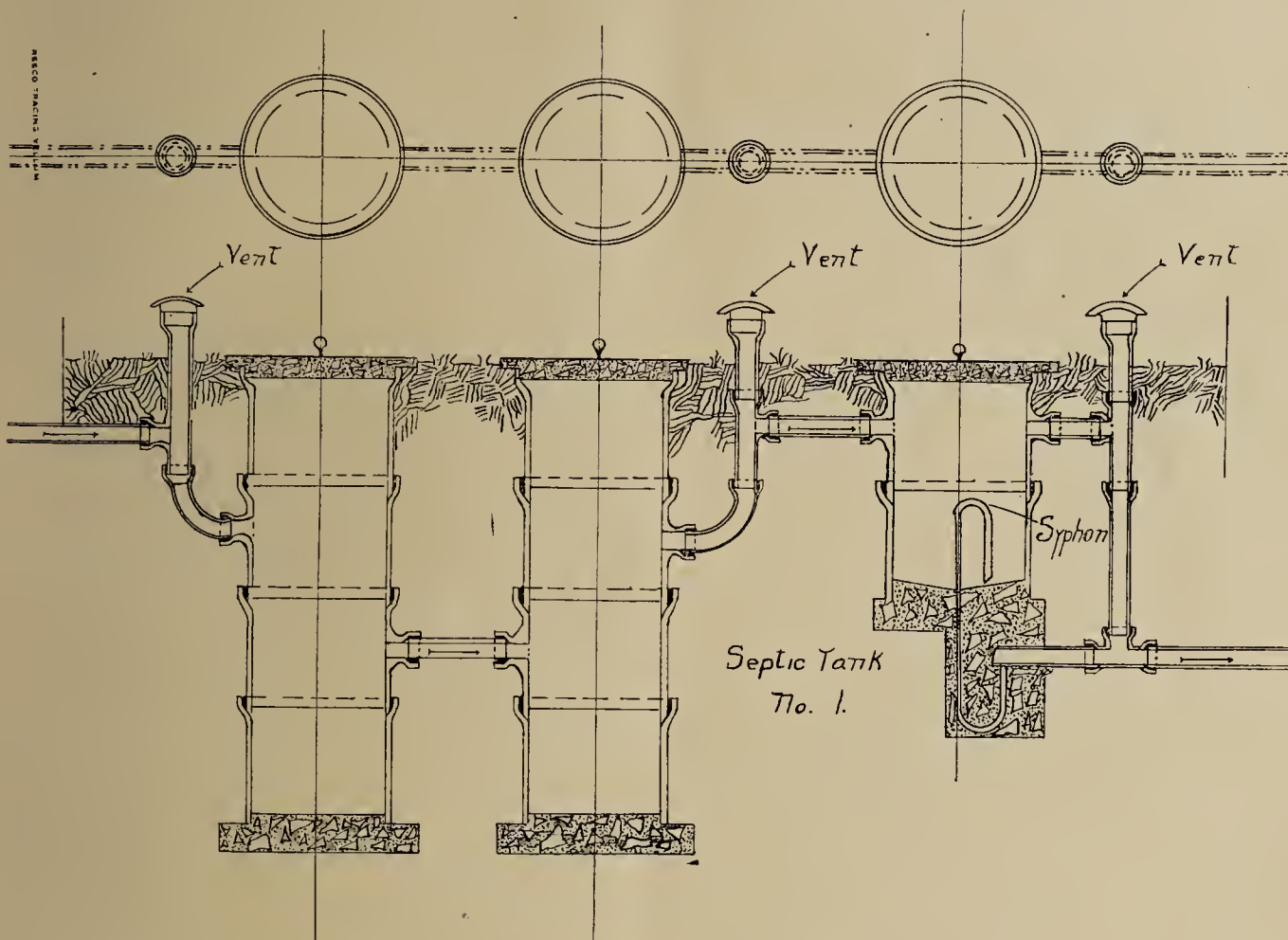
main street sewer. At the bottom of each leader there should be placed a trap in as near a horizontal position as possible in order that the seal will not be broken. The size of this pipe should be estimated from the square feet of roof surface and the annual rainfall in order that the pipe will at all times carry the water away.

House Sewers.

The chief use of vitrified clay pipe is the transferring of the waste water from the house to the main sewer. The trench is first dug, and the methods used vary according to the nature of the ground but the trench should always be as straight as possible in order that the water will have a free passageway. When the ground is sandy the sides will have to be braced with boards on both sides to prevent caving and where the ditch is to be very deep a second row of boards may have to be used. These boards should be kept well down at the bottom in order that the sand will not run in.

one-half pure cement and one-half good sand is used, being mixed to a pasty form which will not run. Some of this is placed at the bottom of the hub and the end of the other length is inserted in this hub and cement is forced in place with a trowel or with the hands. Then a swab is run into the pipe to remove any cement which might have been forced inside of the pipe. 2. Oakum mixed with cement is first caulked in the joint and the remainder of the joint is filled with cement. 3. Oakum is first caulked into the joint and an asphalt or bituminous compound which has been melted so that it will run freely, is then poured into the joint and allowed to harden. A test can then be made on this joint which will satisfy any requirements made by the health boards. The pipe may be placed in a horizontal position or may be placed in an upright position; in the case of it being placed in a horizontal position, a joint runner, first dipped into mud to prevent sticking, is used.

If it is necessary to insert a tee or put in a new length of



When gravel ground is found very often the sides will not need any bracing at all but if necessary a framework of boards may be used. Rocky soil will usually have to be blasted and will not bother the plumber as he does not very often do this work.

The ditch should first be dug to within a few inches of the desired depth and then it can be leveled with the desired fall as the pipe is being laid and this will give the pipe a firm foundation which is essential in the laying of any type of pipe. This pipe should have at least one-quarter of an inch to the foot fall and anything less than this is not considered sufficient to carry off the solid waste matter from the house. This pipe is easily cut by placing the pipe with the hub down and filling with gravel to the cutting point, and then by going around the pipe a few times with a hammer and chisel the pipe will break off at the desired place.

In making the joints for this pipe several different methods are used, three of which I will explain. 1. Cement made of

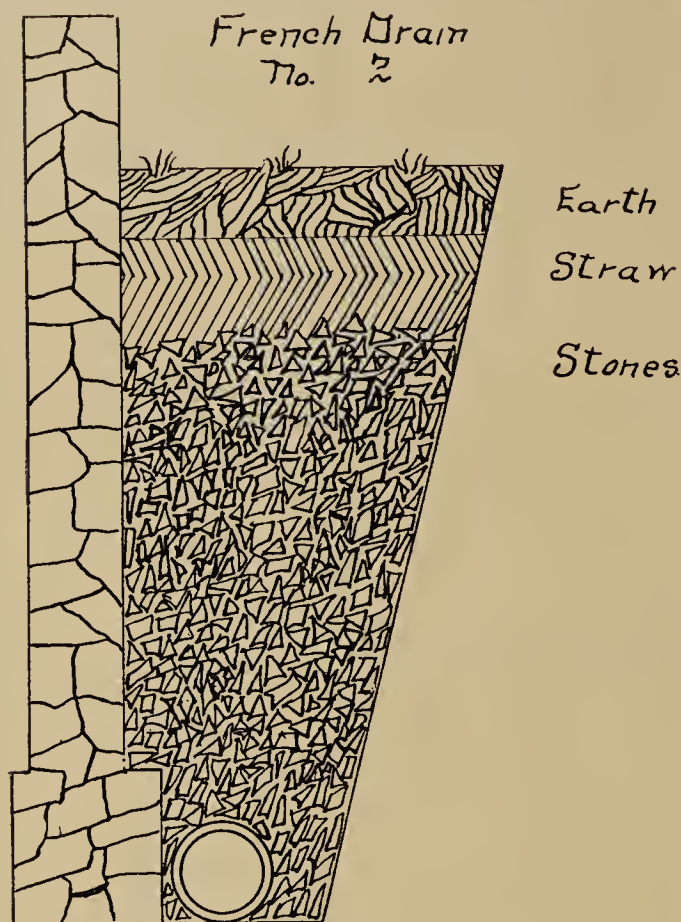
pipe the following method is used. First break out the length to be replaced and cut the top of the hub from the next piece then cut one-half of the hub from the piece to be inserted and it is ready to be put into place. By this means cement can be put inside of the hubs of the bottom part of the pipe which will allow a solid connection where the water will flow while the top of the hubs can easily be cemented as they are in a position where they can be reached. Drawing No. 3. In refilling the ditch great care should be taken in throwing the dirt into the ditch so that the pipe will not be thrown out of alignment and the dirt should be carefully tamped at the bottom to prevent disturbing the line of pipe. If water is used to pack the dirt it should not be put in until the ditch has been filled to the depth of one foot and in any case it should not be flooded into the trench.

In schools and laboratories where chemicals are used the installing of vitrified clay pipe is absolutely necessary be-

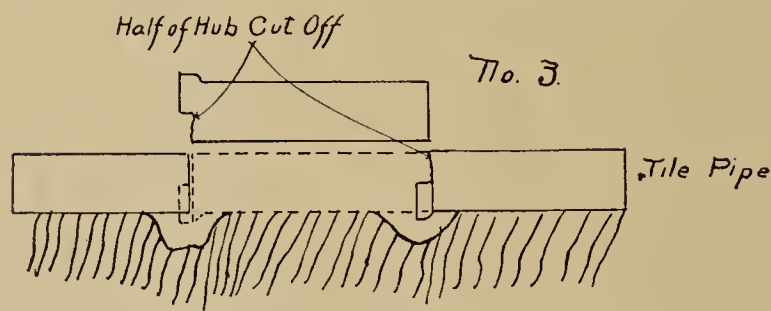
cause of the acids and alkalies, chemical activity on any metal conductors. These chemicals do not bother the glazed pipe at all and is therefore the natural material to use.

House Drains.

A good plan for the using of vitrified clay pipe for the house drains is that by extending the footings of the foundation for a few inches, vitrified clay pipe could be run on this which would give it a very firm foundation by not allowing it to sink at any point. The stacks could be fastened securely to the wall and allowed to enter the pipe at the



bottom. A little thought on this matter would show that by this method a cheaper installation of plumbing would be brought about where cast iron pipe is necessary to any great extent because a small ditch would have to be dug in the



middle of the floor for the cast iron pipe and this would offset any extra cost for the few inches of footing added for the vitrified clay pipe and besides the dirt foundation is never very solid while the footing would give a very firm base and if the building settled at all it would take the pipe on the footing with it.

In summarizing the previous writing I find that I have mentioned three good points in the favor of vitrified clay pipe: 1. Low cost. 2. Will meet any test requirements with bituminous compound joints. 3. Is durable and will last indefinitely. The uses of vitrified clay pipe are many

and varied: 1. Septic tanks. 2. Distributing pipes. 3. Main sewers. 4. Sub-soil drains. 5. Storm drains. 6. House sewers. 7. House drains.

[This article won first prize in the contest conducted by the Carnegie Institute of Technology, details of which were given in the August issue of The Clay-Worker.]

AT THE KENTUCKY STATE FAIR.

THE CLAY PRODUCTS people made a good showing at the Kentucky State Fair this year during the week of September 10-15th, both inside of the Merchants and Manufacturers Building and out in the open ground.

In the Merchants & Manufacturers Building the big showing was made by the Southern Brick & Tile Co., and the Coral Ridge Clay Products Co., spread out side by side in a spacious booth, while right near by was the Louisville Cement Co., which in the course of featuring their Brixment used brick work and really made a better advertising display of brick work than of cement.

The Southern Brick & Tile Co. exhibit was made up of face brick panels showing a number of shades of brick and the different mortar colors in the laying. Then there were sections of walls showing the solid brick wall, a section of ideal wall, and a section of veneered face brick wall with the method of tying to the framing. Also they had samples of their drain tile and an interesting lot of literature for distribution.

The Coral Ridge Clay Products Co. showed in the wall panels not only various types and colorings of face brick and mortar colors but also a panel section of hollow building tile making its own face in size 5x12, sections of wall with face brick facing and hollow tile backing, and many interesting samples of hollow building tile.

The Louisville Cement Co. had a big booth enclosed with brick work which displayed some interesting wall sections framed in with red brick and paneled with cream brick, which effect made a splendid advertisement for brick as well as for their Brixment mortar material which they advocate for use both in the natural gray and for mortar colors.

In another section of the building the P. Bannon Pipe Co. made an excellent display of their products which include quite a wide variety. Their display booth had a wall panel pictorial view of their big plant, while in the booth itself were many samples of different sizes and shapes of sewer pipes, flue caps and flue linings, conduit pipe, coping, fire clay slabs and a pretty full line of the well known Bannon products.

Out in the open ground among the silos and metal corn crib showing the Natco people, who are represented in Louisville by the Tway Building Supply Co., have a permanent exhibit of special interest to those concerned with outbuildings on the farm. There is not only a section of silo and several sections of hollow tile walls for barns and outbuildings, but one of unusual interest was some demonstration panels of corn crib construction with a special tile they get out which is 4x5x8 inches in size, and lays up so that it furnishes ventilation and at the same time safety against rats and an order of permanence that should make a strong appeal to those who want to build for keeps. This exhibit was in charge of S. H. Jackson who is developing the sales work with the farmers in Kentucky working out of Louisville.

Some cut down in the cost of gasoline and continued extension of good road building furnishes new encouragement for the idea of truck delivery over wider reaches of the home territory.

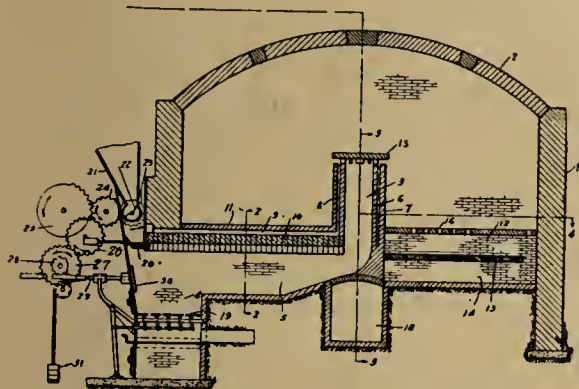
RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

Recent Patents of interest to readers of The Clay-Worker specially prepared for this publication by Clarence O'Brien, Registered Patent Attorney, 17 Southern Building, Washington, D. C.

No. 1,465,744. Kiln. Enoch P. Stevens, Chicago, Ill. Filed May 24, 1922. Serial No. 563,400. 8 Claims. (Cl. 25-145.)

1. A kiln comprising a center flue for the admission of heated gases, a horizontal floor, means co-operating with said



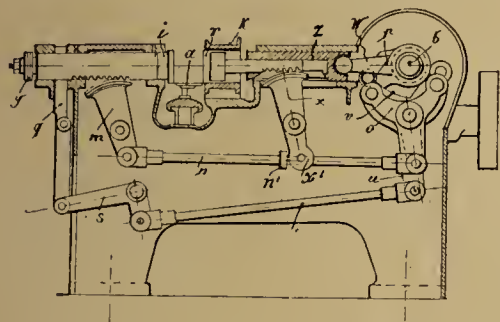
flue for deflecting gases downwardly toward said floor, apertures in said floor and a baffle wall placed below said floor for causing the heated gases to take a tortuous course in passing from said kiln.

No. 1,465,132. Brick-Cleaning Machine. John Hoffmann, Sheboygan, Wis. Filed Apr. 25, 1922. Serial No. 556,483. 5 Claims. (Cl. 125-26.)

1. A brick cleaning apparatus having main and secondary conveyors disposed for operation in paths arranged in perpendicular relation, cleaning members arranged at opposite sides of each of said conveyors for acting upon the exposed outer surfaces of brick carried therebetween, and a transfer mechanism for receiving bricks from the main or primary conveyor and depositing them upon the supplemental or secondary conveyor.

No. 1,466,305. Brick Press. Jean Lamassiaude, Fernand Rouchaud, and Charles Rouchaud, Limoges, France. Filed Mar. 1, 1920. Serial No. 362,509. 5 Claims. (Cl. 25-94.)

1. In a machine for compressing bricks, a cast carrying member mounted for reciprocating movement, a mold ar-



anged at one side of the path of said member, an ejecting plunger mounted for movement in said mold, a compressing plunger also arranged for movement in the mold, behind and independently of the ejecting plunger, a third plunger movable across the path of said member to and from the mold, to move a cast from said member to said mold, means to lock said third member at the end of its cast-moving movement, and means to operate said plungers and said locking means.

No. 1,465,608. Header-Brick Mold. Walter J. McCoy, Omaha, Nebr.; Elizabeth McCoy administratrix of the estate of said Walter J. McCoy, deceased. Filed Mar. 18, 1922. Serial No. 544,749. 8 Claims. (Cl. 25-121.)

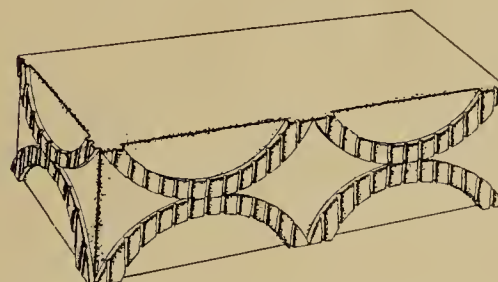
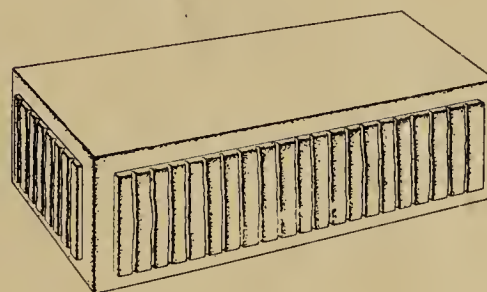
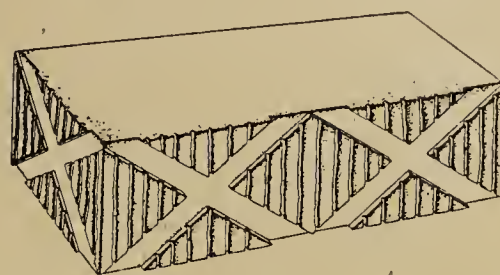
1. In a mold, a body having sides and ends and an open top and bottom, similar projections on the inner faces of the sides, a dovetail projection on the inner face of one end, a

hinged pattern plate having a reduced lower side forming a shoulder and a pallet having an edge thereof engaged with the reduced lower side of the pattern plate and having the shoulder of said plate seated on its upper face whereby to hold the pattern plate in position and engaged within the adjacent mold wall.

No. 1,465,572. Tunnel Oven or Kiln for Firing Pottery and other Ware. Charles Frederick Bailey, Lawton, England. Filed July 12, 1922. Serial No. 574,521. 5 Claims. (Cl. 25-142.)

1. In an oven or kiln, a heating tunnel having inclined end portions and guide tracks, wheeled carriers guided by the said tracks, an endless conveyer device arranged longitudinally of the tunnel, and arms hinged to the said conveyer device and disengageably connected with the said carriers and operating to move them along the tracks and discharge them at the outlet end of the tunnel.

No. 62,881-2-4. Brick. Angelo Castellani, Chicago, Ill. Filed Sept. 22, 1922. Serial No. 3,802. Term of patent 14 years. The ornamental design for a brick, as shown.



No. 1,465,971. Excavator and Loader. Theodore Compton, Indianapolis, Ind. Filed Oct. 29, 1921. Serial No. 511,342. 2 Claims. (Cl. 214-105.)

1. In a combined excavator and loading machine, a wheel supported body portion, an inclined track having its upper end terminating at a point above the body portion, a hopper disposed adjacent to the upper end of the inclined track, a carrier having rollers and adapted to move over the track, said carrier having upwardly extending arms, a scoop adapted to move onto the carrier, laterally extending arms on the scoop and adapted to engage the upwardly extending arms of the carrier for connecting the scoop and carrier, means having connection with the scoop for moving the scoop and carrier over the track, and said arms of the scoop adapted to disengage the arms of the carrier when the scoop is moved to its loading position.

"Material Facts," the house organ of the Cleveland Builders' Supply Co., pulls this one:

"As the silk worm said to the tent caterpillar, a difference in material make a material difference."

When it is a matter of using brick as the material for facing the outside of a building it sure makes a big difference.

Written for The Clay-Worker:

THE CHICAGO SITUATION.



WITH THE YEAR nearing its fourth quarter, it is evident that the close of 1923 will see a new building record hung up for Chicago, unless unforeseen circumstances violently and speedily intervene. The record will certainly be made in building costs and probably also in number of building permits issued.

This does not mean that it has been a "boom" year. Building costs both of material and labor have been far too high for that, and the year will close with Chicago still far underbuilt, certainly so far as medium-priced homes, multiple and single, are concerned. Nevertheless necessary building has not been deterred by prevailing costs and a very healthy amount of activity in the local building world has been in evidence from the first of the year to date with comparatively few set backs from last year's accomplishments. The "construction slump, especially of larger projects, such as apartment houses and office buildings" which was predicted for the latter part of this year by a certain Chicago financier as far back as April has not materialized as yet. The slump was predicted on the ground that building material prices would reach their peak early in the summer. A tight curb on building there undoubtedly is, but considering that each week sees more permits taken out almost uniformly, or at least as many, as were taken out during the corresponding six days in 1922, and with even larger estimates of expenditure, one cannot talk about a "slump" without danger of being laughed to scorn. For example, for the week ending Sept. 8, the Building Commissioner's office issued permits to the tune of 250 as against only 159 for the same week last year, and with an estimated cost of \$14,899,000 as against only \$2,528,600 for the corresponding week of 1922.

To the casual observer Chicago, during these times of high living costs, high taxes and high rents, high wages for labor, unskilled as well as skilled, and almost out of proportion to skilled, and highly difficult conditions for the "white-collar" man—the middle class fellow—seems to be undergoing another evolution in its types of buildings. At first, Chicago, like all small cities, was preeminently a city of homes. Then the tenement of the congested district began to take the place of the dilapidated cottage which housed two or more families in the back-door yard of the budding metropolis. Then the economic advantage of close community dwelling began to impress itself higher up in the social scale, and was secured without utterly sacrificing the entity of the family and the respectability of the race through the advent of the apartment dwelling. As we grew further and further from the blessed day of the two-dollar-a-week maid of all work, two-dollar-a-ton coal and a dollar-a-hundred tax rate, the popularity of the apartment dwelling increased and, incidentally, the types of the structures improved both as to utility and architecture. Also as time went on they changed in another feature. The first apartments were large—seven or eight rooms or better. Gradually the size—the number of rooms, began to shrink. The seven room "flat" which had heretofore predominated began to give place in the plans on the architect's table to six and even five room multiple dwellings. Probably a score of years ago the four room "love-nest" came into its own to be "feathered" by an advertising furniture genius of the period for \$99—\$1 down and the rest as you made it.

Today, Young Lochinvar—unless he be kin to a janitor or a \$146-a-week bricklayer or some one or another of the intensively organized lords of creation—thinks of a four room apartment with the same breathless awe that would have

overwhelmed us had anyone in our halycon days suggested that we lease Mrs. P. Palmer's palace on the Lake Shore Drive and start housekeeping, while the bride-to-be of the present would as soon enter into a life contract as a hotel chamber maid as contemplate keeping that much space clean and in order. "So," says one, "we've reached the era of the two-room-and-kitchenette in-a-door-bed home." Tut! Tut! Our friend is slow. That was four or five years ago, though they are still used some by couples that haven't the price to move. They have been superseded by the apartment hotel, and now the family hotel holds the center of the stage. The various old types of structure still stand and are largely used, it is true, by those who have too little means or too many children or too much philosophy to "move up," but "constructively," or more correctly, "structurally" speaking, the hotel and particularly the family hotel is "the thing," as witness a few examples, work upon which is either nearing completion, well under way, or immediately contemplated.

A new hotel for the west side is the new Garfield Arms with 205 rooms and costing about \$525,000 at 3250-64 Park avenue. Out on the north side at Broadway, Montrose avenue and Sheridan road, there is to be the Broadmont with more than twice as many rooms and costing easily twice as much. As a further illustration of the simple life of the period it will have a year-round roof garden and cafe. The Hotel Sherwin with 273 rooms, but divided into 119 apartments of one, two, three and four rooms each, is announced for Rogers Park at Sherwin avenue and the lake shore. There will be 112 kitchenettes. In addition, however, there's to be a terrace for 130 feet along the water front upon which the main dining room, arranged sunken garden style, will face. Moreover, it's to have a solarium. So even though it's also to have a children's playground, it will probably be no place for Young Lochinvar, the first anyway, unless he be the janitor's heir or the bricklayer's legatee.

Out in Woodlawn, the old-time family hotel, the Hayes, has more than double the capacity of its present plant, nearly ready for use, in a great new annex running up to six stories. Across from it on Minerva avenue at the intersection of Woodlawn, the Wedgewood Hotel of ten stories though with less floor space than the Hayes, is nearing completion. Farther south, work was started in June on the ten-story South Shore View apartment hotel at 7100-08 South Shore Drive, overlooking the South Shore Country Club and the Lake. It will cost about \$1,500,000. Examples could be cited to cover many pages. The thing that is really important is that if Chicago is to be everlastingly a city of cliff-dwellers, at least her cliffs are going to be easy to look upon for they are planned for the most part by true artists and in their exterior construction are those materials which lend themselves most readily to the architectural art—brick, tile and terra cotta.

And by rights Chicago should be a clay-built city. Not only does it house the sales offices that supply the middle west with the products of the leading face brick concerns of the country, but clay products of wide reputation are turned out in great quantity in and about Chicago. Terra cotta from the Chicago market supplies beauty of line and finish to Chicago buildings and is greatly in demand in cities outside as well. The American Terra Cotta and Ceramic Company with its main offices here and its plant a few miles out at Terra Cotta, the Northwestern Terra Cotta Company with its main office and great plant out on Clybourn avenue, the Midland Terra Cotta Company with local office and its plant on the far west side and the Advance Terra Cotta Company with downtown office and works near Chicago Heights, are the local terra cotta producers.

Then we come to the backbone of the clay-building mate-

rials—the common brick, not much in evidence like the terra cotta and face brick and tiles, but essential and used in even greater quantities. Eleven brick manufacturing companies in this vicinity are daily transforming Chicago clay into fire proof building material in the form of “common builders.” It is probable that the Chicago territory may well lay claim to being the largest producing center of common brick in the world, for one of these eleven companies alone—the Illinois Brick Company, is credited with being the largest single manufacturer of common brick on the globe with a capacity production of 750,000,000 brick a year. Next to it in size in the local field is the National Brick Company which claims an output, according to the official organ of the Chicago Association of Commerce, of a million brick for every working day in the year.

The Chicago Brick Company has an average of 300,000 per day. It is the boast here in Chicago that because of the wealth of clay material hereabout and the activity of the local makers of common brick that it is possible for Chicago builders to get their common builders delivered on the job for as low as \$12 a thousand, while New York is said to have been paying from \$18 to \$22 f. o. b. yards, and Boston even higher.

The plants of the Illinois Brick Company are located at Shermerville, Evanston, Rogers Park, Blue Island, Bernice, Dolton and Manteno—all in the Chicago district. To ship their 1922 output required 35,550 standard railway cars which would have made a solid train about 275 miles long to pull which 800 steam engines would have been necessary.

The plants of the National Brick Company are situated at Deerfield, Weber Station (just west of Evanston), Chicago Heights and Maynard, Ind., just south of Hammond and really on the outskirts of Chicago.

The Chicago Brick Company operates its plant at 138th street, Riverdale, just at the city limits.

SCRIP.

IMPROVEMENTS IN TENNESSEE PIONEER BRICK PLANT COMPLETED.

W. G. Bush Company, manufacturers of brick, has recently completed enlargements and improvements in its plant at Nashville, Tenn., costing \$100,000. The company, which is one of the oldest in the state, has been working on a building program for the past year, and the additions to the plant have now been completed and are in operation. The new equipment raises the plant's production to a million brick weekly, and places it as one of the foremost in the entire South. The company property is located on the river front in North Nashville.

Shortly after the Civil War, in 1867, Major W. G. Bush established a brick manufacturing plant upon the site occupied by the factory to the present day, and for the past 56 years it has been turning out brick used in the building of Nashville homes and business houses.

Production for the first few years was very small, but the plant has grown gradually and steadily for a half century with enlargements being made and improvements adopted in manufacturing methods until today it is one of the largest and most modern brick plants in the country.

Previous to the time of the recent enlargements the daily production was 25,000 face brick and 100,000 common brick. The daily production is now 60,000 face brick and 130,000 common brick. Face brick production is devoted exclusively to rough texture, sand-finish or colonials and hydraulic press, all of which are made in several shades.

The company is now operated by the grandsons of the founder of the company, Major W. G. Bush. They are T. L. Herbert, Jr., Bush Herbert and Robert Herbert.

Brick from this plant have played an important role in Nashville construction for the last half century. Many of the city's old and fashionable homes were built with Bush brick, as well as the modern homes and business structures of today.

At the plant, which employs over 100 men, there is also located an office building, housing the office force and chemical and physical laboratories which are in charge of a graduate engineer, who is continually conducting experiments for improving the texture and make-up of the brick put out by the company.

It has always been a policy of the company to keep open house for the public and visitors are gladly shown through the plant by the management.

ALABAMA CLAY PRODUCTS COMPANY MAKING EXTENSIVE ADDITIONS TO BESSEMER PLANT.

PLANS ARE NOW being made by the Alabama Clay Products Company for general revision of the Bessemer plant.

These plans are necessary to double the capacity in order to take care of the steadily increasing demand for the Excelsior fire brick.

Among other changes the plans call for elimination of the steam power plant, which is to be replaced by individual electric motor drives. Also elimination of one of the steam driers now in operation and the installation of a direct waste-heat drying method. This to be connected from nine of the present 14 kilns into the large fire brick drier formerly heated by steam.

These changes and additions will result into a complete and thoroughly modern fire brick plant, will double the capacity, materially increase the quality of the brick and also decrease the cost of production.

BURTON-TOWNSEND COMPANIES BUSY.

Following the appointment of Samuel Kinnear and Arthur Crumine as receivers for the Burton-Townsend Company, Zanesville, Ohio, it was announced that the receivers had met and asked Rufus C. Burton, president of the company, to act as custodian of the properties. This is a distinct compliment to Mr. Burton and shows the general confidence in his business integrity and ability as well as his knowledge of the brick, clay and sand business.

Mr. Burton announces it is the desire of the receivers that all properties of the Burton-Townsend Company be kept running at full force, as they are now doing. The company has a payroll of \$50,000 a month, with orders ahead which will keep the plants going to full capacity well into the winter.

THE REAL BRICK LAYING PROBLEM.

IN THE MATTER of developing schools for the laying of brick and helping train and speed up apprentices who desire to learn brick laying there is dawning a realization that perhaps the most important need is a specific and complete course of instructions in brick laying. When those who are undertaking to put on these school courses ask questions of the brick fraternity and building contractors about what it is they want taught and how and why, the answers are so often too vague and uncertain and lacking in uniformity. So plainly it is the duty of the clayworking interests to co-operate with building contractors and others in developing a comprehensive course of training and instructions which can be made uniform and used everywhere.

Frequent group or district meetings among the clay products people seems to be the order of the day, and to be fruitful of good results.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Brick Business Continues Good in North Carolina.

Editor The Clay-Worker:—

While the demand for brick in this territory has fallen off some, still it can be considered very good. We are not able to run to full capacity on account of shortage and inefficiency of labor, but at that we are turning out 80,000 per day. Building brick are selling here at \$13.50 kiln run, at the factory.

Raleigh, N. C.

CHEROKEE BRICK CO.

Canadian Manufacturer Seeks Clay Mixtures.

Editor The Clay-Worker:

Enclosed find money order for subscription to The Clay-Worker. I received the book "Burning Clay Wares," by Lovejoy, and found all about muffle kilns in same. It is a good book and well worth the money.

Can you advise me as to where I can buy materials such as corning stone, feldspar, oxide of zinc, flint china clay and ball clay? Will appreciate the above information.

BRITISH COLUMBIA.

New Zealand Brick Manufacturer Wants Coloring Material.

Editor The Clay-Worker:

Herewith find check for The Clay-Worker books listed. Will thank you for information relative to the coloring of brick and tile. We are using fire clay which burns a light cream and white and we would like to have material for making darker colored brick. We cannot burn red, as the pigments seem to oxidize and come out black.

There is a good demand for building material of all sorts here at this time.

A. NEW ZEALANDER.

Competition Keen in the Northwest.

Dear Mr. Randall:

We are not running our plant to full capacity, but are quite busy. We have keen competition in this territory, but there is no price cutting, which is a good thing, for the margin of profit is small now. Common building brick are selling for \$12.50 per thousand, with demand good.

Truly yours,

Mead, Wash.

J. T. DAVIE BRICK CO.

German Clayworker Wants Machinery Catalogues, Etc.

Editor The Clay-Worker:—

I am interested in the study of ceramics, and especially in machinery, kiln and dryer plans, as well as setting different claywares, particularly tile and roofing tile, and the proper laying of roofing tile. I, therefore, am taking the liberty of asking you to request machinery manufacturers and kiln builders to send me catalogues, etc., with plans of kiln and

dryer construction, such as is used by large manufacturers of building and roofing tile in the United States. I have recently received such data from English firms through the courtesy of the London Institute of Clayworkers.

Thanking you in anticipation of this favor, and assuring you of my willingness to reciprocate at any time, I am,

Yours truly,

ADOLF ZACHARIAS,
Leopoldsdorf, bei Wien, Germany.

New York Brick Men Experience Difficulty in Securing Efficient Labor.

Editor The Clay-Worker:

Owing to difficulty in securing sufficient and efficient labor and adequate supply of fuel for burning our output will be reduced this year. It now looks as though it would not exceed our 1922 production, and unless conditions for the balance of the year improve the output may be less. Prices are good, common brick selling for \$20.00 at the dock.

EMPIRE BRICK & SUPPLY CO.
New York City.

Brick Plant to Operate Full Time Balance of Year.

Friend Randall:—

New building operations here in Birmingham are now slowing down, but present and prospective orders indicate that our plant will operate full time for the balance of the year. While we are not getting as high a price for our brick as is the case in other localities, still we can't complain. Clay brick are selling at \$13.00 per thousand, while shale brick bring \$15.50, this is for common building brick.

With best wishes for The Clay-Worker.

Yours sincerely,

Birmingham, Ala.

JOHN W. SIBLEY.

Ceramist to Make Trip to France.

Dear Mr. Randall:—

You will perhaps be interested to know that I expect to leave for France the latter part of September to present a paper on "The Relation Between the Composition, the Micro Structure and the Physical Properties of Porcelain," before the International Conference on Insulators to be held in Paris the week of October 8th. I am going over in the interest of the Champion Porcelain Company and the Jeffrey-Dewitt Insulator Company, and while there will do some advisory work for the Company General D'Electro Ceramique, one of the largest manufacturers of ceramic in France. They recently completed a modern plant equipped with tunnel kilns to manufacture our special thick insulators under the Jeffrey-Dewitt patents.

I hope to find time to visit several plants in other countries, as well as France.

With kind regards.

Very truly yours,

F. H. RIDDLE,

Director of Research, Champion Porcelain Co.

Common Brick Selling for \$12.50 in Chattanooga, Tenn.

Editor The Clay-Worker:—

Wonder if brick manufacturers elsewhere have had one thing to contend with that we have. One of our local newspapers have been advising people not to build on account of the cost, and it has apparently had its effect on the trade locally, for orders are now coming in slowly for local jobs, but the outside trade up to the present time continues very good. Brick are not unreasonable in price, being \$12.50 per

thousand at the plant. We are still running to full capacity, turning out 45,000 per day.

With good wishes.

R. N. LOGAN, General Manager,
The J. W. Wells Brick Company.
Chattanooga, Tenn.

THE TRADE QUIZ BOX.

QUESTION: Can you furnish us with authentic information in regard to the amount of fuel required to burn 1,000 brick in periodical kiln?

Answer: On page 146 of "Burning Clay Wares," by Ellis Lovejoy, is a table giving an estimate of coal required to burn various wares. The quantity of fuel depends upon several factors.

First, the temperature required to properly harden the clay; second, the character of the coal; third, the type and efficiency of the kiln; fourth, the time required to burn the clay which is widely different; fifth, the ability of the burners not only to keep awake but also to get maximum value out of the fuel.

Several years ago two samples of clay were sent in to determine why one yard used an excessive quantity of coal and a competitive yard a relatively small quantity. One of the clays fused to a glass around cone 4 and it was hard burned between cone 07 and cone 04 while the other was still soft at cone 12. The cause of the difference in fuel consumption was evident.

One yard in the east burns off its kilns in three days—one day heating up by the Minter system and two days firing with wood, using one-sixth cord of wood per thousand bricks, less than 200 lbs. of coal.

The kilns are round down drafts and they are closely set and to a height exceeding thirty courses. It is not a question of burning the bricks but instead one of getting the kiln hot enough to make the bricks hard in as short a time as possible—in other words to push the fires until the bricks are hard in the bottom of the kiln and the work is done without damage to the bricks. On the other hand some clays require that the fires be coaxed along for a dozen days or more with corresponding fuel consumption, often as high as a ton of coal per thousand common bricks.

If one succeeds in burning common bricks in a down draft kiln with 500 (or fewer) pounds of coal he is doing extremely well, and if the consumption exceeds 900 pounds the operation is under a handicap. Seven to eight hundred pounds of coal per thousand bricks in a down draft kiln is average work.

CAREY P. ELLIS.

PASSING OF PROMINENT DENVER CLAYWORKER.

It is with deep regret we announce the death of William F. Geddes, of Denver, Colo., which occurred August 9. Mr. Geddes was president and owner of the Denver Sewer Pipe and Clay Company, which he founded many years ago. Mr. Geddes was always interested in the welfare of his employes, and in his will directed that a sum of \$25,000 to be known as the "Denver Sewer Pipe and Clay Co.'s Old Employes' Fund," and that a committee of five which shall include the president, secretary and superintendent of the company and two others to be selected by the employes to benefit be named to serve without compensation, to direct the disbursement by the directors and trustees of the fund. Those who have been in the employ of the company ten years previous to Mr. Geddes' death and those who have served the company ten years,

but who are now retired as a result of cause beyond their control, will benefit by this fund. The principal and accumulations from the fund are to be used before the expiration of ten years, and if any of it is left at that time it is to be distributed equally between those who were employed by the company ten years prior to Mr. Geddes' death and those who continue to be employed until the expiration of the period named.

TESTING CLAYS

THE BUREAU OF STANDARDS has developed a series of tests applied to the drying properties of clays. In order to have this work include a wide range of materials and to become of general, practical use, manufacturers are urged to submit for test clays in use at their plants. It will be desirable to receive a variety of clays, those which have the best drying characteristics as well as those which offer difficulty in drying.

Clays submitted should be accompanied by the following information:

1. Kind.
 - (a) Surface clay.
 - (b) Shale.
 - (c) No. 1 or No. 2 fire clay.
2. Articles manufactured.
 - (a) Hollow tile.
 - (b) Sewer pipe.
 - (c) Brick (paving or building).
3. Drying treatment in plant.
 - (a) Type of dryer.
 - (b) Time required to dry.
 - (c) Temperatures in dryer (if tunnel dryer, at hot end).
4. Difficulties experienced. Extent of loss of ware.

The tests to which the clays will be subjected will include the following:

1. Average water of plasticity.
2. Drying shrinkage at 100 deg. C.
3. Safe and ideal rate of drying stated either in per cent of moisture loss per hour or, if the weight relative to the exposed area of the manufactured pieces be given, the time can be stated in hours, with the proper temperature, humidity and air circulation to be maintained.
4. Rate of drying shrinkage compared to loss in moisture and the stage of drying at which shrinkage is complete.
5. Strength of the unfired piece.
6. If desirable, dry porosity and the moisture diffusion constant can be given; however, these factors are related and applied in the drying rate under No. 3.

It is expected, from this work, that it will be possible to recommend improvements in drying treatment and to overcome difficulties now current in the handling of many materials. It will also be possible to give data on new materials, predicting their drying behavior in commercial dryers.

The manufacturers can aid largely in this work by immediately submitting samples of their raw material together with full details of character and treatment, as previously outlined.

Good products and better products is still a good slogan for the brick industry.



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FORTIETH YEAR OF PUBLICATION.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

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CURRENT COMMENT.

Yes We now have no coal strike! Sung by Coolidge and Pinchot.

* * *

Do your coal shopping early because there may be delays and higher prices later on.

* * *

Mechanical handling equipment for coal helps both in saving time and in reducing cost.

* * *

When the returns are all in, it will probably show that this is the biggest year we have had in the brick business.

* * *

In the fire loss figures of the country there is always good argument for a wider use of clay products in building operations.

* * *

Arguing about who is to blame for the high cost of building doesn't help any unless it leads to specific effort all around to reduce the cost.

* * *

More specific gauging of the rate and amount of settling in kilns in the process of burning is part of the order of the day in progressive plants.

* * *

It is claimed that most of the progress we have made in the world is technical rather than political or cultural, and this should be a reminder that educational and technical effort leading to new things and better methods which have always been a feature of the N. B. M. A. annuals is a big

factor in our national welfare in addition to charting the way to progress in clayworking.

* * *

There was a little slowing down of the prosperity wagon in mid-summer, but it is under way again now.

* * *

The farmer has his hard times but he seldom goes broke, and in this country does not know what a food famine means.

* * *

The motor drive is making steady progress in clayworking machinery and incidentally it is helping in the development of portable equipment.

* * *

Sell yourself on your products as well as the other fellow and use more of them in erecting buildings for your requirements in your own business.

* * *

Financial reports show a gain in bank deposits and savings accounts which indicates that we are learning something of thrift as well as prospering.

* * *

The persistent showering of the past summer should help some in the good work of selling the tile drainage idea to farmers during the fall and winter.

* * *

We still need an occasional reminder that it will be helpful for us to develop more of the salesmanship factor in connection with the clayworking industry.

* * *

Fuel oil has not only become an interesting feature in the burning of clay products but there is promise, that it may become a big factor in the near future.

* * *

There is not much chance to accumulate any burdensome surplus of brick to carry over through the winter even if plants are kept going full time from now on.

* * *

The offer of the Bureau of Standards to make a series of tests on the drying properties of clays should be greeted with approval by the entire clayworking industry.

* * *

Let us also make it the end of the vacation season for non-membership in the N. B. M. A. and everybody join now and be an active worker before as well as after the coming big annual.

BUILDING COST ITEMS.

Practically all this year there has been a disposition toward buck passing in the matter of high cost of building. The producers of material have in some cases blamed the dealers with the high cost to consumer. Dealers, on the other hand, claim they have striven to hold down the price of material to a narrow margin of profit and that all the saving here has been more than offset by higher wages demanded in the building trades. Labor representatives, on the other hand, point to high prices for building material as the main factor in building costs, and so it goes. There has been a lot of claims and counter claims and much detailed itemizing of what keeps costs up, while meantime very little has really been done to reduce cost. Cost continues so high as to be a handicap to progress and the need for today and for tomorrow and for the future generally is more earnest getting together to devise ways and means for holding costs down to a rational basis so as to insure a continuation of the active building which makes for general prosperity. Let us analyze the items of cost that we may get better under-

standing, but instead of doing this for buck-passing purposes, let us seek to develop out of the work practical ways and means to save cost.

CARS FOR CLAY PRODUCTS.

It has been pointed out heretofore that one reason why shippers of brick and hollow building tile have more than their share of trouble about getting cars when there is a car shortage is that there are not enough cars available of the type suitable for loading and shipping clay products. It used to be that coal cars served this purpose and were readily available. Today most of the new coal cars are hopper bottoms and are only suitable for coal, sand and gravel and other products loaded loose for dumping. This bars them from use as cars for clay products and many other uses which coal cars used to serve while moving about the country. We are likely, during the fall and winter, to develop a condition in which we will realize acutely the need for more cars suitable for shipping brick, hollow building tile and other clay products. It is in order, therefore, for the different organizations to get together and make representation to the railway heads of the needs of the industry so that they may be induced to build more cars that will fit in with the requirements.

THE TAX MORTGAGE.

The taxes of the present day contribute a sort of first mortgage on the business and people of the United States that is a source of some worry now. Taxes here are not so high or so burdensome as in some other parts of the world, but by the time we get through paying special government taxes, state and county taxes and city taxes we have a sum all told which is said to be equivalent to a mortgage on all the property of the United States to about 65 per cent of its valuation, bearing an interest of 5 per cent. In other words, we have an annual tax, including national, state and local, estimated at eight and a half billion dollars, which is more than double what it was ten years ago. It is not an impossible burden, but it is heavy enough that it should make us take a keener interest in both politics, economy in government, and systematic distribution of taxes that will make the burden as light as practical.

CONCERNING THE FARMER.

At first the newspapers of the country figured the farmer out as being in the middle of a bad fix with too much wheat and declining prices, and now the same papers have turned about and figured out that the wheat surplus is more imaginary than real, and even if it is off a little in price, it doesn't mean much because wheat only represents about 6 per cent of the farm products. In a word, they played the farmer one way a while and now they are playing him the other to cheer him up, when, as a matter of fact, the publicity has not done much of anything for the farmer except to make known the fact that there is plenty of wheat this year and the prices on it are not as high as was hoped for. It is right and proper that we should always consider the farmer because the farmer is the mainstay of the nation and his prosperity is essential to the welfare of industry and of business generally. Here, as elsewhere, however, we find that variations in the degree of prosperity from year to year are not as great as some would have us believe, and the farmer persists in thriving through ups and downs with less hardships than other lines of industry. The main point to it all

is that when the farmers of any community are hard up and depressed, they are inclined to let up on buying and making improvements, while on the other hand, if they feel prosperous they are heavier buyers and they are more active in making improvements on the farms. And what changed the tune with the newspapers was the indication that depression talk is bad business and not helpful. The need of the day, both for farmers and business men is optimism and a persistent pushing of business along proper channels.

IMPORTING COMMON BRICK.

There was contained in the Dow Daily Building Reports recently a story to the effect that some man had returned from Holland with contracts signed and sealed for the entire output of tide water brick plants producing 200 million common brick, all to be made from American molds taken with him, and which are presumably to be shipped into New York market. It is said, too, that other importers have made similar contracts with German and Belgium brick plants and that the reason is the prices of brick in New York territory have reached the point where they can buy and import these brick at a profit.

There is no means at hand at the moment to verify these reports nor can anyone foretell to just what extent brick may be imported into this country. There may be a temporary situation which makes it practical to buy brick abroad and import them into New York territory or other seaboard points where brick is scarce and unusually high, but the idea of any general business of large magnitude either importing or exporting common brick does not look practical.

The first reason is that handling and transportation costs are big factors in the common brick trade. Face brick or fancy brick commanding a high price may be shipped long distances and handled several times, but common brick is a different thing and often it is the cost of handling that makes the major item of cost.

There are several interesting questions here as to the probable quality of brick made in Holland and Germany in comparison with those made in the United States, but these do not merit lengthy discussion at the moment in connection with the matter of imports because if the reports in this instance are true it is plainly an experiment that would only carry through a period of shortage and unusually high prices.

MASONRY WALLS VS. LUMBER.

Estimating from figures secured in 1920, the National Lumber Manufacturers' Association figures that about 85 per cent of all dwellings constructed are of frame construction, and about 14 per cent are of masonry walls with lumber used on the interior. It is homes, and especially the smaller homes that are considered here. When it is a matter of listing all buildings, masonry makes a better showing because brick enters more generally than lumber in the larger building undertakings. In fact in the larger buildings for industry, for offices and commercial purposes, schools, churches and hospitals, the tendency is strongly toward fireproof construction where lumber is mainly conspicuous by its absence.

Now it is time for the clayworking industry to give more attention to this very matter of homes, and even the smaller homes, for it is here we have the big field for future progress. There is not so much call to advocate brick and hollow building tile for the more pretentious buildings, for the builders of these are already sold on the idea and it is merely a matter of selling them on some individual item or detail. But that the home builder is not yet properly sold is evi-

denced by the figures given. Also, plainly the larger sales possibilities here are indicated by the large percentage of frame homes.

Some day all these will be built of other material than lumber, and today is a good time to get busy, and keep busy, at the job of selling the home builder on masonry walls. There is room for lots of good work here in every community, and by every clayworker making brick or hollow building tile.

LINE MATERIAL AND PORCELAIN INSULATOR CATALOGUE ISSUED BY THE WESTINGHOUSE ELECTRIC COMPANY.

THE WESTINGHOUSE Electric & Manufacturing Company has issued a new catalogue covering line material and porcelain insulators. The catalogue is supplementary to the Company's large supply catalogue and has been issued for the convenience of purchasers of these two allied lines of materials. It is a 200-page publication of convenient size, is fully illustrated, and contains a complete description of all the Company's line material and porcelain insulators.

AMERICAN BUILDINGS WITHSTAND JAPANESE EARTHQUAKE.

AMERICAN STEEL concrete buildings in Tokyo and Yokohama withstood the earthquake shock and are in good condition, according to a cable from Assistant Trade Commissioner G. C. Howard at Kobe. Officials of the Department of Commerce expressed gratification over the first practical demonstration of the effectiveness of the new so-called earthquake-proof factories and office buildings which have been constructed within the past three years. There are about six of these building in Tokyo. The fact that this construction has proven earthquake proof is likely to influence favorably the adoption of this type of construction in the future.

The Assistant Trade Commissioner also cables that export as well as import shipments probably must be made via Kobe for some time. Kobe, on the Inland Sea, is 200 miles outside the devastated area. It is the chief import center of Japan and is surpassed only by Yokohama in export trade.

PRESIDENT COOLIDGE COMMENDS CELEBRATION OF CONSTITUTION DAY ANNIVERSARY.

THAT THE AMERICAN people will be the more disposed to live in accordance with principles of the Constitution of the United States as they understand the advantages of that document better, was the statement made today by President Coolidge in a communication to The Kiwanis Club International, in commenting upon the activity of that organization in holding a nation-wide celebration of the signing of the Constitution, by over a thousand clubs, on September 17th, and during the week of September 16-22, which has come to be known as "Constitution Week." The President's message in full reads:

"The annual observance of September 17th as Constitution Day in honor of the fact that it is the anniversary of the signing of that great charter, is a custom altogether worthy of continuation and perpetuation. I am glad to know that the day will be so widely celebrated this year, for I am sure that, as the American people widely appreciate the blessings that their Constitution has insured to them, so they will be the more disposed to live in accordance with its precepts and purposes."

Rivalry as to low fuel record and quick time in burning coupled with thoroughness and the high quality of ware is one of the good signs of the times in the industry.

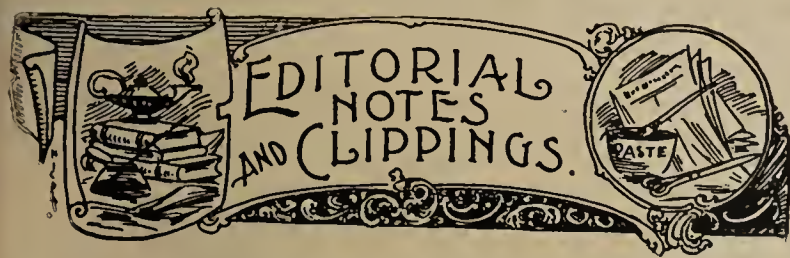
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THE BRICKLAYER PROBLEM.

There is a twofold problem in the matter of bricklayers as a key to the building situation and to the future progress of brick and hollow building tile in building operations. One is made up of higher wages and lack of sufficient numbers of men qualified to do bricklaying. The other is lack of improvement in the way of machinery and new devices that will enable workers to produce more in the way of bricklaying. It has been pointed out and featured in public prints that the bricklayer works today with age old methods, that his tools, that his methods of laying, are practically the same as they were in the earlier days in construction history. There have been efforts to develop and improve devices to facilitate bricklaying and increase the quantity of work per man, and we should persistently keep after this until we can get some of the improvement here that is noticeable in the work of handling clay and manufacturing brick. When we can improve the facilities for laying by new methods and mechanical devices then we can not only justify high wages for bricklayers, but we can do more brick building with the same number of bricklayers and that will contribute materially to solving the shortage problem. Meantime the active interest in bricklayers' schools will surely result in an increased number of bricklayers in the course of another year, unless the trade school term is made so long that real benefit from that source is minimized. A two or three-year course in any trade school is an absurdity. A two or three-months' course is ample for a bricklaying course and a longer term is a wanton waste of time.



The Valley Cities Brick Company has been incorporated at Youngstown, Ohio, by David Jenkins and N. T. Hurd.

The Love Field Pottries have been established at Dallas, Tex., with a capital of \$15,000. The incorporators are L. S. McKaney, E. B. Doggett and others.

The Windsor Locks Brick Company has been organized at Windsor Locks, Conn., with \$25,000 capital stock. A plant is now being erected for the manufacture of building brick.

The Eastern Sewer Pipe and Brick Company, of Hagerstown, Md., has been incorporated with \$350,000 and started work on a plant to have a daily capacity of 150,000 building brick.

The Acme Brick Company is turning out 72,000 building brick per day at its Denton, Texas, plant, according to A. B. Kelly, manager. Shipments during the summer months totaled about 200,000 brick per week.

G. W. Holland, of Lincoln, Neb., is at the head of a company which has purchased the plant of the Table Rock (Neb.) Brick Company. The plant is being put in condition to be operated through the winter months, turning out both brick and building tile.

At the recent annual meeting of the stockholders of the Potomac Fire Brick Company, Piedmont, W. Va., the following officers were elected: President, John A. Caldwell; vice-president, W. S. Smallwood; secretary-treasurer, John P. Miller; assistant secretary, H. M. Allen; manager, W. F. Caldwell.

The Huntsville (Ala.) Brick Company has had a busy and prosperous season, supplying not only the local demand, but shipping to nearby Alabama towns and also to Tennessee and Georgia. J. B. Van Valkenburg is president; Thomas N. McAllister, vice-president; R. H. Canterberry, secretary-treasurer, and W. L. Jones, superintendent.

The new plant of the American Vitriified Pipe Co., at Lisbon, Ohio, which has been in course of construction for several months, is now nearing completion, and the management announces that they expect to be ready for operation sometime in November. The new plant is to be one of the most up-to-date of any plant owned by the company, which has its headquarters at Akron.

One of the largest industrial plants in Northern California is said to be that of Cannon & Company, brick and tile manufacturers, at North Sacramento, which was established in 1914, and turns out 1,200 tons of building material every month, including face brick, fire brick, hollow building tile and floor tiling. The plant occupies about ten acres of the 150-acre tract owned by the company, on which there is a fine deposit of clay. D. A. Cannon is manager of the plant.

D. J. Kennedy, of Darlington, Pa., one of the best known building brick and supply men of that state, died at Poland Springs, Me., where he had been spending a short vacation. Although he had not been in rugged health for a number of years, he was seriously ill only a short time. Mr. Kennedy was a native of Pittsburgh and had been engaged in the brick and supply business nearly all his life. At the time of his death he was president of the Darlington Brick & Mining

Company, the Bulger Block Clay Company and the Superior Mining Company.

P. S. Lavender, of Tuscaloosa, Ala., will establish a plant at Pensacola, Fla., for the manufacture of flower pots, flues and the like.

The Denmark Brick Company has been incorporated at Columbia, S. C., with a capital of \$20,000 with C. F. Rizer as president and G. M. Neeley as secretary.

The Davenport Clay Company has been incorporated at Davenport, Okla., with a capital of \$75,000, with J. C. La-Fountain of Kansas City, C. A. Noll of Wichita, Kan., and others as the incorporators.

The Harbison-Walker Refractories Company, with headquarters in Pittsburgh, will erect an immense plant at Bessemer, Ala., to cost approximately \$600,000, for the manufacture of fire brick and other refractory products.

The Glasgow Clay Products Company, Glasgow, Va., is now running the plant to full capacity, making about 35,000 brick per day, half of which are face brick. Common brick, shale wire-cut are selling direct to the trade at \$17.00 per thousand.

W. G. Bush Company has recently completed enlargements and improvements on its plant at Nashville, Tenn., costing about \$100,000, making this plant one of the most complete and up-to-date plants in the South, with a capacity of 150,000 brick per day.

James T. Howington, of the Coral Ridge Clay Products Company, Louisville, Ky., reports a good season. For two months, the plant was run steady on hollow tile, but the first of September, having enough tile on hand to take care of their large contracts, they started in to make 50 per cent of the production brick.

Jay Terry, of Kingston, N. Y., writes they are running their plan about three-quarter capacity, making 200,000 brick per day. The labor situation is not good with a good deal of loafing before and after pay day, and this causes a variation in the product. The demand for brick is quite brisk and bids fair to continue so with the price at \$18.00 per thousand.

Frederick N. Beegle, New Galilee, Pa., died at the New Brighton, Pa., Hospital, August 16th. Mr. Beegle was president of the Beaver Clay Manufacturing Company, New Galilee, and also of the Beaver Refrigerator & Potteries Company, New Brighton. He was sixty years old, and had led a very active life. In addition to his interests in the clayworking field, he was president of the Standard Gauge Steel Co., the Union Drawn Steel Co., the Idwal Tool & Mfg. Co. of Pittsburgh.

Production of 100,000,000 face brick at the four plants of the Canton Brick and Fireproofing Company is expected in 1924, officials of this concern have announced. Already this year the 1922 figures which were 17,000,000 brick, have been exceeded and it is anticipated that the year will round out approximately 42,000,000. More than half of the company's entire production next year will be made at the New Comerstown, O., plant of the concern, now in development and said to be the largest brickmaking plant in the world. At the present time according to officials, a stock of from 20,000,000 to 30,000,000 will be kept on hand when the new plant is completed, so as to be available for shipment on a minute's notice to any dealers. Plants of the company are located at Midvale, Robertsville, Canton and New Comerstown. The local plant was the first purchased by the company in November, 1920, and practically marked the inception of the

(Continued on page 280.)

COMMON BRICK
FACE BRICK
IRONSTONE BRICK
FIRE BRICK



HOLLOW BUILDING TILE
PARTITION TILE
DRAIN TILE
SEWER PIPE

OFFICE PHONE, WAS. 951
YARD PHONE HY. 104

Hadfield-Penfield Steel Co.,
Bucyrus, Ohio.
Gentlemen:

When your Mr. W. H. Merkel called upon us, and explained what a wonderful machine your No. 384 Grinder was and its capacity, together with the remarkable saving made by its installation, we felt if it would accomplish half of what he claimed, we would consider the installation a good investment.

We have had this machine in constant operation for over a year and it has practically paid for itself. It does the work of four standard nine-foot dry pans with ease on about one-fourth the power. We have eliminated ten men and a world of grief, and consider it a real pleasure to be around and watch the No. 384 Grinder devour 400 tons of our hard shale, which is a day's work, without any effort.

During the time this machine has been in operation we have never been called upon to renew repair parts and the machine has more than covered all statements made by Mr. Merkel. We are very much pleased with the design and workmanship of this machine and can say that it is the most satisfactory machine in our establishment.

Very truly yours,

John B. Cohoon
mjr.

AMERICAN GRINDER No. 384

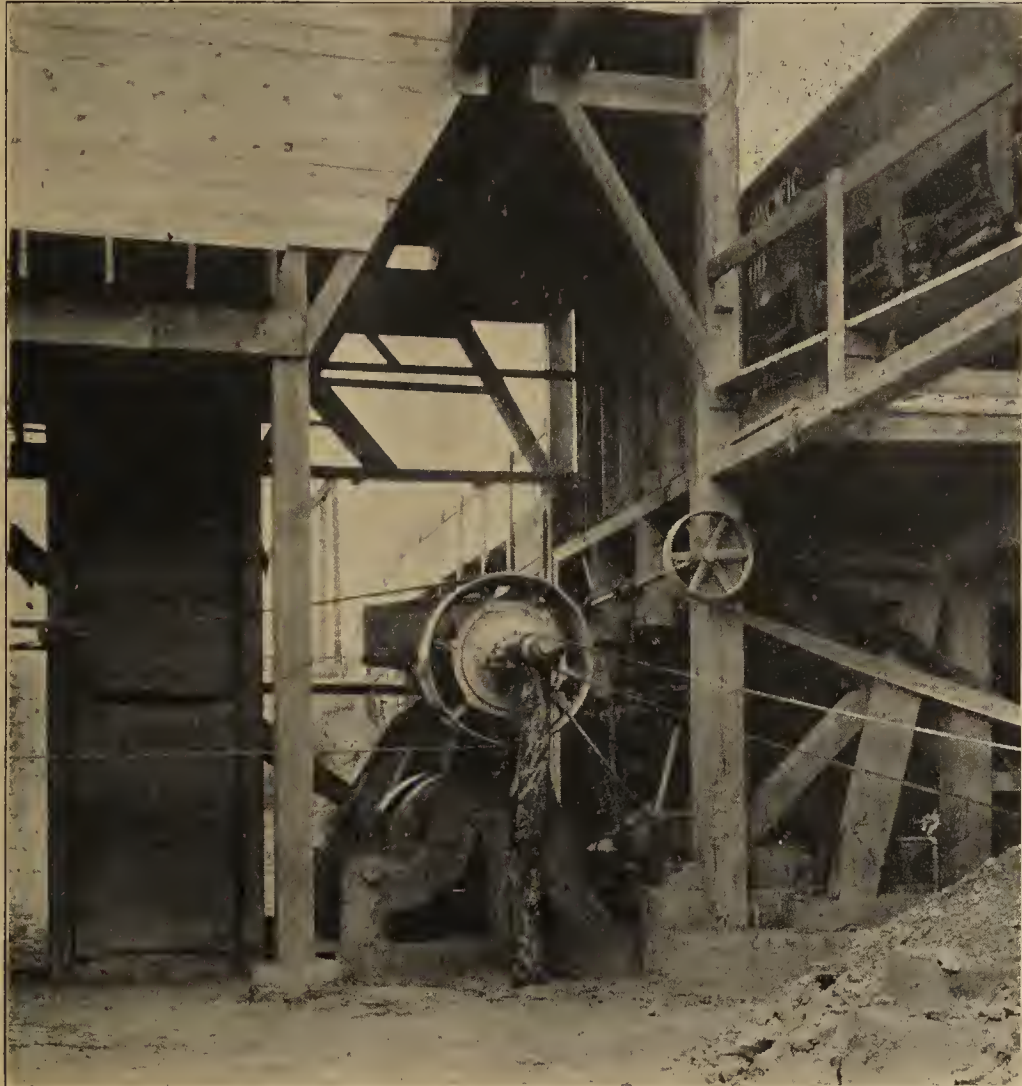
**Grinder Efficiency is a Combination of
Correct Design and Correct Construction**

In The American No. 384 Grinder we have that Combination

The American No. 384
Grinder is Doing the work
of three to six nine-foot
pans.

Consider the Capacity—
Cost Saving—Quality of
Output.

Power Saved—50 to 70
per cent.
Space Saved—80 per
cent.
Labor Saved—25 to 75
per cent.
Repair and Wear Saved—
75 per cent.



American No. 384 Grinder Installed at The Salt Lake Pressed Brick Co. Plant

A dozen hard headed, close figuring, careful buying, progressive Clay Products Manufacturers have recently bought these grinders, to better their quality, increase their output, and cut their cost.

“Ask the Men Who Know”

Glen Gary Shale Brick Co.,
Reading, Pa.
Citadel Brick & Paving Block Co.,
Quebec, Canada.
Francis Vitric Brick Co.,
Muskogee, Oklahoma.

Gladding, McBean & Co.,
Lincoln, Calif.
Bradford Brick and Tile Co.,
Bradford, Pa.
Clay Craft Mining and Brick Co.,
Shawnee, Ohio.

Salt Lake Pressed Brick Co.,
Salt Lake City, Utah.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio
Builders of the “American Line”

EDITORIAL NOTES AND CLIPPINGS.

(Continued from page 277.)

Canton Brick and Fireproofing Company. Dr. W. F. Demuth, New Philadelphia, O., is president of the company.

The Duntill Co., Ltd., of Montreal, Quebec, has been incorporated to manufacture brick, drain tile and sewer pipe. The company is capitalized at \$150,000.

The brickmaking plant at Ruston, Wash., formerly known as the Goss Brick Company's plant, is being rebuilt, and brick will be turned out by the latter part of the month.

The West Texas Tile & Brick Company, of Stamford, Texas, has been incorporated with \$100,000. J. H. Payne, F. R. Sturtevant, and J. J. Ryan are incorporators.

Plans are under way for the leasing and subsequent operation of the Tiernan Brick Company's plant near Macomb, Ill. John D. Blount of Chicago, is interested in the proposition.

Harry Kallin and associates of Warwood, W. Va., have organized the Progressive Ceramics Company for the purpose of manufacturing clay specialties. The company has been capitalized at \$250,000.

The brickmaking plant of Edward W. Mack & Son, at Windsor, Conn., is being enlarged to twice its original size. New machinery and appliances will be installed to bring the plant up to modern requirements.

The Virginia Shope Brick Corporation has been incorporated at Roanoke, Va., with a capital of \$100,000. J. H. Dunkley is president and C. M. Brown is secretary. The company will manufacture brick, tiling and other clay products.

The Locke Insulator Company is installing at their Baltimore plant where they make high grade insulators for high voltage transmission lines, a complete equipment of cold end compensation pyrometers supplied by the Thwing Instrument Company, Philadelphia.

J. Stocke, Jr., of St. Louis, Mo., the new vice-president of the National Brick Manufacturers' Association, writes they are now turning out 100,000 brick per day, which they are selling at \$17.00 per thousand. Mr. Stocke expresses the opinion there will be no change in prices until labor becomes stabilized, and this he thinks is in the far distant future.

Charles F. Hoslet, brick manufacturer and contractor of Dayton, Ohio, died at his home in that city recently after an illness extending over a number of months. His wife and thirteen children survive. Mr. Hoslet had been a resident of Dayton all of his life and was active in both business and social circles.

W. H. Gifford, recently with the Reliance Brick Co., of Kansas City, Mo., has returned to Cleveland, Ohio, where he is associated with the Bowen Brick & Supply Company, of that city, as vice president and general manager. Mr. Gifford has been in the brick business in Cleveland for many years and has a wide acquaintance among the builders and contractors of that city and vicinity.

The Brooks Brick Company, of Brewer, Maine, operates three yards in that city, with a total output for the season of 6,000,000 brick. At two of the plants they are turning out the old fashioned water struck brick, for which there is a good demand, the brick being shipped to points in New Hampshire, Massachusetts and Rhode Island. All of the yards are

operated by electricity. The brick are burned with wood. The company makes drain tile as well as brick.

W. H. Merkel, Southwestern Engineer and representative of the Hadfield-Penfield Company, has recently changed his location, and is now permanently located at 3725 Wyoming St., Kansas City, Mo.

C. L. Archer is reported to be interested in the establishment of a company at Corinth, Miss., with a capital of \$40,000 for the manufacture of common and face brick, having a yearly capacity of 6,000,000 brick.

The Thwing Instrument Company, Philadelphia, Pa., recently installed a very complete pyrometer equipment at the new plant of The Clay Products Company of America, New Hope, Pa., with which the manager of the plant, Mr. Malcolm, is very much pleased.

The Parkersburg Clay Products Corporation has been organized at Parkersburg, W. Va., with a capital stock of \$250,000. Those interested are G. L. Dudley, J. B. Dudley, B. M. Miller, George C. Mead and Mrs. George Meade, all of Parkersburg, W. Va.

The Pacific Clay Products Company has started work on the construction of the first unit of a brickmaking plant at South Gate, Calif., to cost approximately \$150,000. The company has twelve acres of ground in this tract. Later on other units will be built.

The Southern Brick and Tile Company, Louisville, Ky., of which T. Bishop is general manager, reports a splendid season, with prospects good for a continuation of a good demand for some time. The Company's "Bishop's Colonial Brick" has been in great favor for residence construction the past summer as well as for large structures.

Some four years ago, Harbison & Walker Refractories Company, Pittsburgh, Pa., equipped their plant at Downingtown, Pa., with the Thwing Radiation Pyrometer. Now, after the most severe testing, they are so well pleased with it they are equipping six of their plants with similar apparatus supplied by the Thwing Instrument Company, Philadelphia.

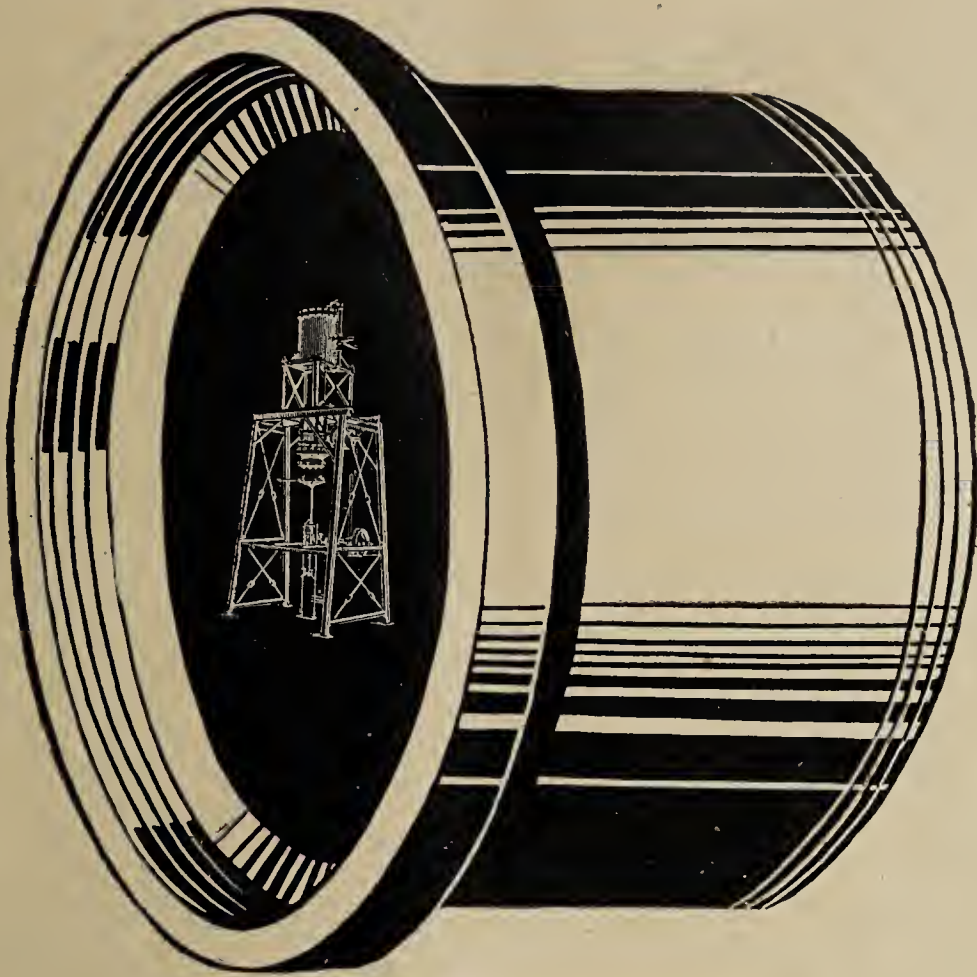
THE GOOD ROAD.

A good road, in the strictly modern sense, is one over which all legitimate classes of modern highway traffic can run rapidly, without interruption, and in safety, in any kind of weather, in any season of the year, and at any hour of the day or night.

Many roads are called good, by the motorist, if they are good part of the time and under certain favorable conditions. These same roads at other times may be very far from satisfactory. A road that is excellent today and bad a week from now is not a good road.

In the public mind the "good" road is often taken to include any road which is not hopelessly bad, or any road that is somewhat improved, or a road that under some circumstances is quite satisfactory. With standards rising higher all the time, it is well to emphasize that a road is not worthy of the name "good" unless it functions properly at all times. The difference in first cost between such a road and one that is satisfactory only part of the time is not great, especially when maintenance costs are considered, for it is a well-known fact that the cost of maintaining a fair road is much greater than the cost of maintaining a good one.—Municipal and County Engineering.

Honest labor is a thing to be proud of, dishonest labor leaders are things to get rid of.



**As surely as day follows night
a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

Written for THE CLAY-WORKER.

MISSOURI HAPPENINGS.

DR. H. P. GREGORY, of Mexico, Mo., will erect five brick houses on lots that he owns in that city, using clay which he is mining on the place, and is planning to manufacture sufficient bricks for the five homes. He has secured a contractor to do all the work and will erect two houses first, which will be the cost finders for the rest. The move of Dr. Gregory is one of the most unique in a building way that has been pulled off in Missouri for some time and it is believed it will greatly reduce the cost of construction.

Mr. and Mrs. H. G. Myers, of Rich Hill, Mo., have departed for Chattanooga, Tenn., where Mr. Myers will take charge as manager of the Dickey tile plant in that city. He lately returned from Kansas City and said he learned that the Dickey plant in Rich Hill will not resume operations for some time, probably six months or a year, due to the unsettled conditions and depression of business over the country. Mr. Myers had been manager of the Rich Hill plant three years.

The A. P. Green Fire Brick Company, of Mexico, Mo., has secured leases on clay lands in Callaway County, adjoining Audrain County, in which the Green factories are located and the contract calls for 100,000 tons of clay to be mined each year. The lease is on a 200-acre farm between Mokane and Ham's Prairie. The company is now shipping on an average of two carloads of clay from Fulton, Mo., and the shipments from the new leases no doubt will be shipped from the same city.

Casper H. Williams, 54 years old, an employe of the A. P. Green Fire Brick Company, of Mexico, Mo., died at his home in that city recently, after being sick six months with heart trouble. Williams was born in Philadelphia and came to Missouri ten years ago, first settling in Moberly. Eight years ago he went to Mexico and has been connected with the Green Company since. He is survived by the widow and three stepchildren.

The Laclede-Christy Fire Brick Company of St. Louis, has been awarded the contract for erecting the stokers at the University of Missouri power house in Columbia, Mo., at a contract price of \$6,360. The bid was accepted tentatively by the university officials, subject to a change in the specifications and while the final amount of the contract will not be known until the changes are made, it is believed the cost will be near the figures given above.

A new 34-foot kiln has just been completed at the factory of the Fulton Fire Brick Company at Fulton, Mo., and the foundation for another kiln has been put in. When it is finished work will be started on the third and then the fourth kiln. The new kilns, with those now in use, will give the factory 18 kilns in which to burn its products. The roof of the new dry house at the plant is being put on. The structure is 60 by 200 feet in size and the roof contains more than 12,000 square feet. The late fall always brings large orders from the railroad companies for locomotive firebox linings and a big trade is expected by the company with the coming of cool weather.

The Edwards Brick Company of Columbia, Mo., has been awarded the contract for furnishing the brick to be used in widening Ninth Street in that city. The company furnished the brick for the original paving on that street 17 years ago and an inspection of those brick in the course of the present improvement reveals that it has stood the strain of traffic much better than some other brick that was purchased for use in other paved streets in Columbia.

Work had to be suspended temporarily at the "Josephine"

plant of the A. P. Green Fire Brick Company at Mexico, Mo., when the walls of the engine room caved in. The shut-down resulted from damage to the main drive and power engine. The engine room is next to a passage that separates it from a bin of clay and both buildings were constructed of brick. It is thought the bin was too full of clay and this caused the wall next to the engine room to give way. When it fell it struck the engine room, causing the roof and another side of the room to fall in.

Benjamin Albert Wheeler, 75 years old, a resident of Carthage, Mo., for 39 years and one of the early day brick manufacturers of that city, died there recently. Death was due to a general breakdown, following a long period of ill health, although Mr. Wheeler had been bedfast only about a week. He was born in North Carolina and resided in Macon, Mo., before moving to Carthage. For a long time he was associated in the brick business with his brother, I. C. Wheeler, and they did a prosperous business. Mr. Wheeler is survived by the widow and six children.

MISSOURI.

SCHOOLS FOR BRICK MASONS.

SCHOOLS FOR BRICK MASONS are rapidly springing up in all sections of the country, San Francisco, St. Paul and Minneapolis have begun schools from funds raised by public subscription among contractors and others interested in the building trades.

The course is for six months and the students, as fast as they show efficiency, are given an opportunity to enter the employment of contractors. Students acquire sufficient knowledge to enable them to begin work at the trade in from four to six months. The tuition charge for the course of six months is \$5. There are no restrictions as to age, any one over 18 years is eligible. Many of the very best students are men between the ages of 25 to 35.

The cost of training a man is about \$35. The school has proven to be so popular that we had a waiting list of students this winter and additional room has recently been added to the school quarters. Our enrollment for the present term is about 100 students. It is an inspiring sight to see the class at work and to think that we have been instrumental in opening up opportunities to each of these men, which under the old system, would never have been possible. The men attending the class are of an exceedingly high type. Many of them have families and support themselves by working part time at other work while attending school.

The theory of training men in this way has proved a success and the school has prospered, according to A. V. Williams, Secretary of the St. Paul Builders' Exchange, writing of the school's progress in the current issue of American Industries. He says:

"It has fully met the expectations of the most optimistic of its promoters and is now a permanent Minnesota institution.

"The purpose of the school is to train men in the brick-laying trade, so that the shortage of mechanics in that trade of about 33 1/3 per cent could be relieved, and an adequate number of men enter that trade each year. The United States Government Census report for 1920, shows that there was 26.3 per cent fewer mechanics working at the bricklaying trade in 1920 than there were in 1910.

Getting the school children interested in brick and clay products is good work. It is a thing to keep in mind and take up with your local schools during the present school year.



This is the Tale the Captain told

The Captain of the boat which had just returned from New York after taking down a boatload of 400,000 AutoBrik said: "That was the best load of Brick I ever hauled to New York. When we came to clean up the spalls and dirt on the barge, after the Brick were unloaded, there were only two box barrow loads, or about one-tenth as much as with the usual load of brick."

* * *

While this report is not vital, it is important. It is further evidence that the yard that operates AutoBrik Machines is sending good brick to the market—Brick that does not bat easily; Brick of good bond; Brick that will bring repeat orders and frequently a price premium because of their excellence.

The thinking Brick manufacturer has already installed—or is thinking of installing—the AutoBrik Machine. This is so important a factor in brickmaking that everyone should be fully posted.

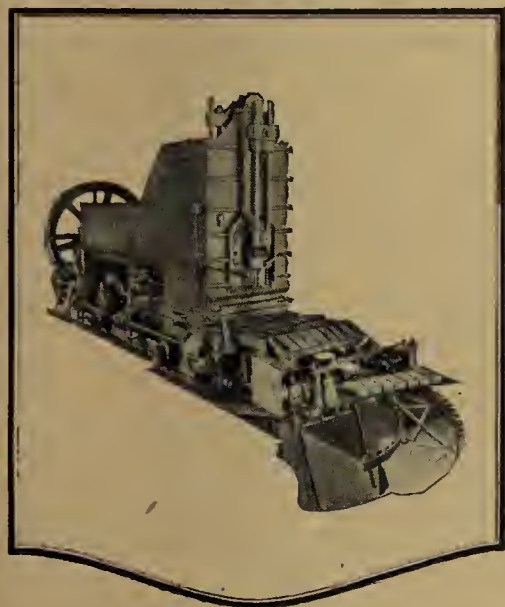
Lancaster Iron Works, Inc.

Lancaster, Pa.

Brick Machinery Department,

James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.



The AutoBrik Machine, aside from making good brick, has for all time eliminated the uncertainty of the human element. The exclusive automatic feature has eliminated the ceaseless hunt for men who can stand the strain of bumping and dumping.

Another factor is that without unnecessary overhead of payroll, production can be increased from 25 to 100 per cent.

AutoBrik Machine

Written for THE CLAY-WORKER.

NEWS FROM DIXIE LAND.



RICK, SEWER PIPE, Terra cotta, clay and tile interests are very active in the South. Building continues unabated and a great part of it is brick, with some brick and concrete structures, some terra cotta and tile. Drainage propositions of large moment are being worked out in the Mississippi Valley and for these much drainage tile is used.

Sewerage systems complete are being put in at many of the towns of the 3,000 to 5,000 class that have not heretofore enjoyed the same. Memphis among the southwestern cities leads in activity, but Dallas and New Orleans are exceedingly active. Hot Springs, Ark., is about to start on a program of several million dollars. Nashville in the present first eight months has doubled the permits of last year. Little Rock, Jackson, Miss., and Vicksburg are quite active.

It has been some time since a report of the big work at Memphis has appeared in The Clay-Worker. The present status is about as follows: The Catholic Club is finished, being furnished and shortly to be occupied through its eight floors, magnificent in brick, tile and cut stone ornamentation. The Tri-State Hotel to be completed by March 1 or sooner, is now up to the fifteenth floor its contemplated height and the brick work exterior is being placed, a dark red brick, the three lower floors are in stone, tile partition work and much tile decorative work will follow. The structure will cost about \$1,500,000. The contract for clearing the site for B. Lowenstein Bros., Inc., department store on the site of the old Peabody Hotel, Main and Monroe, is now being cleared. A 12 story annex of the hotel and a 12 story structure will rise there, nine floors above the ground and three below, with bridge to the Front Street store and office section. The plans are by Architects Hanker and Cairns, of Memphis, Emile Weil, of New Orleans. The Snowden interests or Peabody Company will build the structure which is leased for forty years to the department store.

The hotel closed August 31. Its new home will be completed by Jan. 1, 1925, at Union Ave., S. Third and S. Second. Plans by Architects Walter W. Ahlschlager, Inc., of Chicago. This building will be twelve stories, six hundred rooms, with ball room, convention hall, banquet hall, lobby, sample rooms, dining rooms, forty stores in the block, driveways, etc. It will cost with site more than \$4,000,000. The contracts for neither of the latter two structures have been let as yet, details of the plans to be completed first.

The contract has been let for the twelve story Cotton Exchange Building, southeast corner S. Front and Union, to Kaucher-Hodges Co., of Memphis, site nearly cleared by S. Malkin & Co. The investment will amount to around \$700,000, and the building be devoted to the Exchange and Cotton offices. Mahan and Broadwell, of Memphis are the architects. The work is well under way on the Security Building, Front and Madison, opposite the Custom House. McKim, Meade and White, New York, Louis Carlisle, Memphis, architects; E. W. Minter & Co., Inc., 115 Broadway, New York and Norfolk, Va., contractors, foundation completed, first floor in progress. Cost around \$1,000,000. The Malone and Bowden Marble and Tile Co., Vance Ave. and South R. R., Memphis, have contract for the decorative tile work.

The plans for the Cossitt Library addition have been re-drafted and the addition will be two stories instead of three, probably of Connecticut red sand stone to conform to present structure with much tile and decorative work, terra cotta, etc., in portions of the building and roof. E. L. Harrison is the architects. The site is a commanding one on the bluff

of the river, just south of the Memphis Custom House. The addition will cost \$150,000 and start soon.

The Auditorium, Main and Poplar, shows great progress, the steel work and much of the walls and roof being in place, it will be completed during the spring by the contractors, Jas. Alexander Construction Co. The exterior of light colored brick, considerable tile work and marble in the interior, fire proof, and to cover the entire block, the west section being devoted to the municipal market.

Many of the brick dealers and manufacturers, the tile and roofing firms will exhibit at the Tri-State Fair in Memphis, Sept. 22-29. The fair is now some sixteen years established with many modern buildings.

Architect Raymond B. Spencer, Goodwyn Institute, Memphis, has awarded the contract for a new residence for Edgar Webster, Poplar pike, east of Highland, to W. H. Harris, Dutch colonial, cost about \$15,000. Brick exterior.

The Arlington Hotel at Hot Springs, is to be rebuilt soon, the site now being cleared. This is a large hotel and will cost upwards of \$2,000,000. Little Rock architects have prepared plans.

DIXIE.

TRADE AGREEMENTS.

It is illustrative of some of the contradictory angles of our theories of business and politics to find the Secretary of State recently making a prediction that the future will bring some agreement between nations to limit and control competition in trade so as to keep business on a more stable basis and free from economic warfare. At the same time the government here is actively prosecuting trade organizations in industry and business which seek to make agreement or even plans by which they can regulate trade and stabilize prices and assure the safety and welfare of business as well as protect it against this same economic warfare in the domestic trade.

Some day we are due to realize that industrial and economic warfare is wrong just as real war between people and nations is wrong, and that we must have trade organizations and agreements intelligently and conscientiously handled to eliminate destructive warfare and to keep industry and business properly safeguarded to run on regularly and continuously.

It is about time for us to get busy at examining this angle of our business affairs and their relation to politics. The real business of government is to safeguard the people against imposters and unfair treatment. The real need of the day is for more broad minded, clean thinking to the end that we may, through business organizations, have agreements which will safeguard and stabilize industry and business generally in the domestic trade as well as in our foreign connections as suggested by Secretary Hughes.

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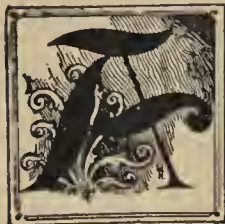
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See Page 290.

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Written for The Clay-Worker.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



ANYONE BROWSING AROUND the downtown section of Milwaukee will be inclined to discount the statements current that the building situation is not as indicative of prosperity as one might wish it to be. In fact, anyone who has never actually witnessed the results of an oil boom on a western city, might readily imagine himself now seeing one, for there is hardly a block on the entire length of that part of Grand Avenue devoted to business interests, where there is no new building, or at least a new front, being erected. Sidewalks in the downtown district are covered at frequent intervals by protective roofs, calculated to save pedestrians from the inconvenience occasioned by falling bricks or mortar.

Nor are building operations confined to the business areas, for permits for the erection of no less than 325 homes were issued during the month of August. The housing shortage at present is quite acute, and builders are doing their best to erect places of residence, as well as of business, for the countless number of people now inadequately housed. Expansion seems to be the one thing local concerns are doing nothing else but, and concerns dealing in building materials are enjoying a prosperous season.

August of this year witnessed the issuance of 3,459 building permits for a total sum of \$2,939,432, as compared with 3,648 permits for \$2,566,344 the same month last year. The total of permits issued this year to date, is 25,559 for \$26,381,136 as compared with 23,462 permits for \$21,899,773 during the same period last year.

Other cities throughout the state are enjoying similar prosperity in the building industry. All in all the slump in farm buildings is pretty well counterbalanced in the cities.

Among the contracts recently awarded to Ricketson & Schwarz of Milwaukee, were those for the face brick to be used in the construction of the new L. O. O. M. lodge building at Fond du Lac, to cost \$125,000, and for the new \$1,000,000 Hotel Loraine at Madison. The hollow tile for the latter structure is being supplied by the Wisconsin Face & Fire Brick Co., also of Milwaukee.

The favor with which the people of Ladysmith look upon the quality of brick turned out by their local concern, Savord & Savord, is evidenced by the fact that most of the brick used in building operations there are supplied by the local firm. Notable examples of buildings in which the bricks are used are the new express building owned by George Zepp, and a number of homes in the community. Brick for the new addition to the Ladysmith high school, which is now under construction are also furnished by the Ladysmith Brick & Tile Company.

A fine example of the sturdiness of a solid brick wall was brought to light in Milwaukee, when workmen razed the old building of the Freie Gemeinde, on Fourth Street. The building was built back in 1870, long before the era of steel frame construction, when bricks cost about \$20 per 1,000 laid. When it was time to wreck the 16-inch wall, the wall was braced both inside and out to prevent buckling. A cable was led from the wall to a truck, loaded with eight tons to give it traction. A steady pull toppled the wall, estimated to weigh more than 40 tons. The strength of construction and of the mortar is attested by the way the wall hung together and by the fact that it did not fall away below the floor level.

Among the several films to be shown before the American Mining Congress, in convention at Milwaukee Auditorium during the week of Sept. 24, will be one showing "The Story of Fire Clay Refractories." The films were produced and are released by the federal bureau of mines.

Contracts for the terra cotta to be used in the construction of the new \$360,000 building being erected at the corner of Grand Ave. and Third St., Milwaukee, for the Straus Building Corporation, has been let to the Northwestern Terra Cotta Co., of Chicago.

A. BADGER.

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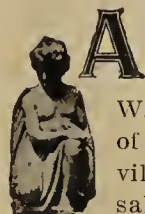
EAGLE IRON WORKS

Builders

Des Moines, Iowa

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.



A NNOUNCEMENT IS MADE of the completion of the reorganization of the Mosaic Tile Company's official personnel, made necessary by the death of W. M. Shinnick and N. E. Loomis, officers in charge of the company. Roy E. Jordan, formerly of Zanesville, will continue in charge of the general eastern sales department with headquarters in New York. Frank Ross of Zanesville will be in charge of the western sales offices with headquarters at the plant.

J. Russell Herrold, who has been identified with the company for several years and who recently was advanced to the position of general superintendent, has been selected secretary of the company. William Bateman, is president and treasurer.

A new tunnel kiln has recently been completed at the plant and will be ready for use the latter part of the month. The company is enjoying a most prosperous business and there is a great demand for their products.

The Shepler and Moomaw Clay Company have erected a large brick storage warehouse at their clay plant at Sugar Creek, Ohio, and have installed a limestone crusher and are now grinding limestone for agricultural purposes.

The Norwalk Enamel Products Company, at Norwalk, Ohio, recently incorporated for \$500,000 and will erect a new factory, work on which will be started immediately.

Pottery manufacturers of the East Liverpool district are vitally interested in a new freight arrangement which went into effect this week on the Youngstown and Ohio River Railway whereby small crockery shipments destined for eastern trade can be shipped to New York City at carload rates.

Under the new system shipments can be made to New York without transfers at junction points such as Pittsburgh and Harrisburg. This will decrease the breakage which usually occurs in transferring casks from one car to another. To get these rates the car must be filled to capacity.

The Stough Brothers, Clatus and Lester, of Findlay, have bought the Hoytville brick and tile plant in Hoytville and will operate the factory. A number of improvements will be made according to officials of the concern.

The will of the late William David Brickell, president of the Iron Clay Brick Company, probated this week, bequeaths practically all of the \$400,000 estate to his widow, Mrs. Cora Ross Brickell, who is named administratrix. About half of the estate is in personal property and the remainder in real estate.

A change in management has been made at the plant of the Consolidated Clay Products Company. G. O. French, who has been associated with the firm for several years, has resigned and at present Edward Rommell is acting as general manager and treasurer. Frank Snyder of Massillon is president. Old policies will be followed.

William S. Gifford, long identified with the brick and builders supply industry in Cleveland, has just been elected vice president and general manager of the Bowen Brick and Supply Co.

The supply firm organized about eighteen months ago by Dana Bowen recently opened its first warehouse in the old Newburg section.

Mr. Gifford, who has had wide acquaintance in the building field here, resigned as sales manager for the Cleveland Builders' Supply and Brick Company eight years ago, going from Cleveland to Chicago and later to Kansas City where he affiliated with the brick industry.

Chillicothe's newest industry, the manufacture of tile, will be fully under way by September according to statements made this week by the officials of the Buckeye Tile Company. Those in charge of the new concern are J. E. Hysell, general manager, and C. C. Carter, superintendent. Hysell has had extensive experience in the East Liverpool and Wheeling clay districts, while Mr. Carter has spent 18 years in the tile business. "Our products will be ceramic mosaics," Hysell stated. "Within four or five months after we begin production, we will employ from 125 to 150 workers. All colors of tile will be made, five different kinds of clay being used, one variety of which must be imported from England.

BUCKEYE.

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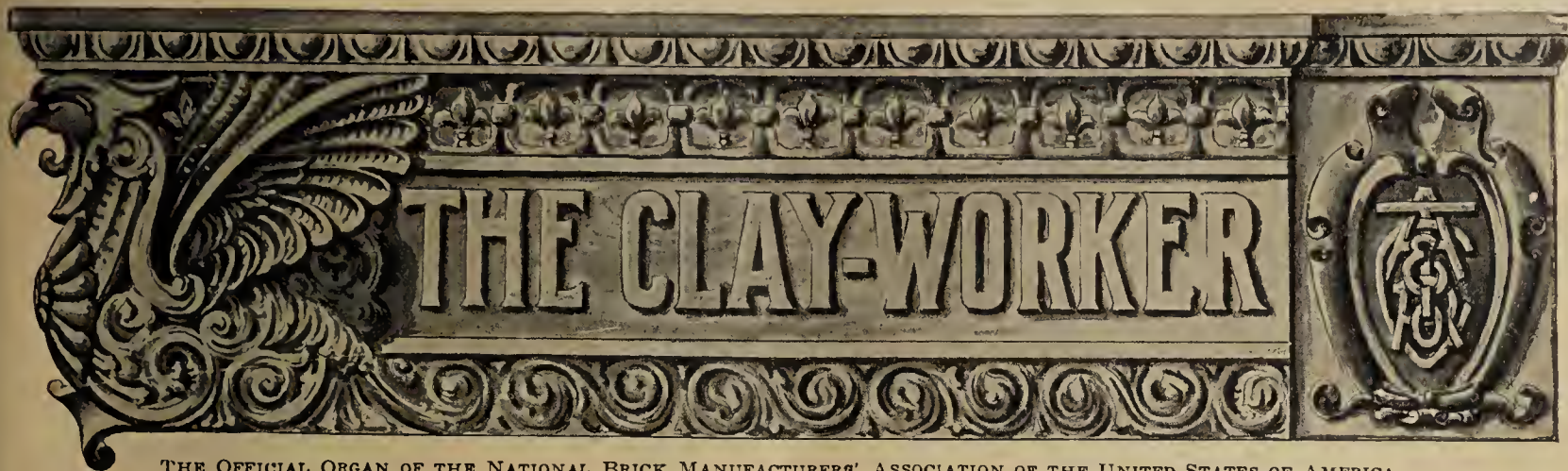
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THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 80

INDIANAPOLIS, OCTOBER, 1923.

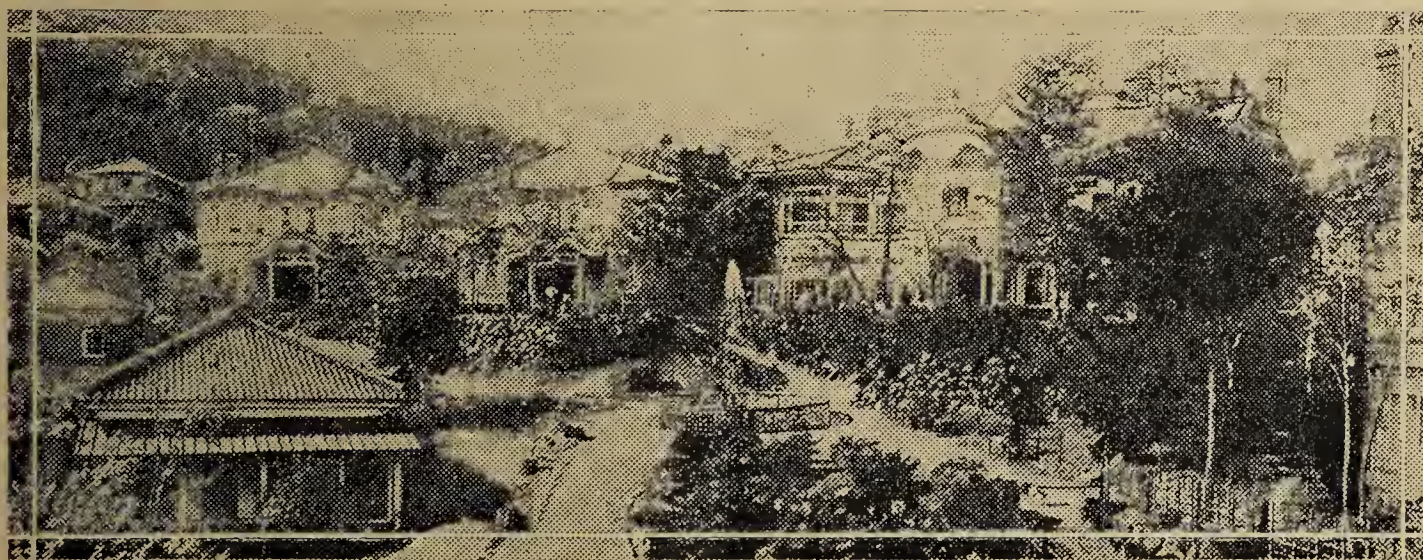
No 4.

THE JAPANESE DISASTER

Graphic Account of the Destruction of Tokio by an American Resident One of the Fortunate who Escaped and Gives this "Close up" of the Dreadful Disaster. The Only Thing of Value Left in the Wreckage was the Brick Which will be used in the Reconstruction of the City.

THAT TERROR AND disaster ensued during the terrible Japanese earthquake and the scenes left in its wake are contained in a dramatic story just received from F. C. Middleton, a representative of the Westinghouse Electric International Company in Tokio, who was in the midst of the holocaust. The men he mentions in his accounts are L. A. Osborne, vice president of the Westinghouse Electric and

up at Mr. Baker and as I did so he screamed 'get out,' and the three of us, (Baker, McManigal and the writer), started for the door. Immediately following the vertical vibrations a giant hand seemed to seize the building and shake it, exactly as a terrier would shake a rat. We reached the corridor and tried to rush down the stairway from the second floor to the entrance. Plaster was falling about our ears and



The Fijij Hotel at Miyaneshta, a Summer Resort Popular with Tourists, and Which Escaped with Little Injury, and but Few Deaths.

Manufacturing Company; I. F. Baker, manager for Japan, and R. A. McManigal, another representative of the company. The Takata & Company building mentioned is the company's headquarters in Japan.

Mr. Middleton's account of the earthquake follows:

"At two minutes to twelve o'clock noon, September 1, I was in the very middle of a letter to Mr. Osborne, when a giant subterranean ice wagon seemed to drive under the building. The building lifted gently four times. I looked

the tiles of the wainscoting popped out horizontally at us. Although we were only on the second floor, it must have taken fifteen seconds to get into the street, owing to the rapid vibrations and the debris under foot. We ran across the street to keep away from possible falling walls and looked about. Tokio was covered by a haze of dust and plaster. The Takata building was swaying backward and forward through an arc of at least two feet. As we watched it, the second quake came and thereafter at intervals of say, twenty

minutes, other minor quakes occurred. We had all left the office without our hats or coats and the writer never returned.

"Although the Tokio quake was much more severe than the San Francisco quake no one realized what had happened. The three of us shook hands and congratulated ourselves on our escape and I, at once, asked Mr. Baker for permission to proceed immediately to Yokohama to ascertain what had happened to my wife. Of course, Mr. Baker realized that we all wanted to know how things were going at home, so I started off, without a hat or coat, to the Tokio station. I went up to the platform and there noted the first serious quake damage. The roofs of the steam platform and departing electric platform had both collapsed. Even then, probably two hundred passengers were expecting the next electric train to leave in a minute or so. Looking southward from the platform the rails were all in perfect alignment and we all supposed that traffic to Yokohama would be unimpeded. This was probably ten minutes after the first quake. From the platform, I noted a large fire in the direction of the Imperial Hotel, which was, I believe, the Tokio Telephone Company. To the north, just beyond Mitsukoshi, another large fire had broken out in the fish market. After twenty minutes, I realized that there was no possibility of getting a train to Yokohama. I then went to the front of the Tokio station and looked about for a taxi. There was none.

"The Marunouchi building, completed six months ago, by the Fuller Construction Company of the Orient, was still standing. Most of the facing brick had been shaken to the sidewalk. Several persons had been killed or injured by these falling pieces. Foreigners reported the inside decorations mostly destroyed. However, owing to its steel skeleton construction, it did not collapse. The Nippon Oil Company building immediately adjoining the Marunouchi building, another steel skeleton structure, was still standing but the second floor was completely wrecked.

"Adjoining the Nippon building there had stood an eight story reinforced concrete building without a steel skeleton. This had completely collapsed. It is reported that two hundred workmen were killed. This is easily credible as the writer does not see how any living thing could possibly have escaped the tons of concrete that crushed through the basement.

"Five foreigners and the writer, after endeavoring to charter or even buy a taxi, started from this point to walk to Yokohama. As we came past the Metropolitan police station, the Tokio Telephone Company fire had gained such headway, it was seen that the police station, Imperial theater and Tokio Kaikwan were doomed. There was no water pressure. One fire engine was pumping a futile stream from the moat surrounding the palace grounds.

"As we passed from the Marunouchi (business) district, we noticed that small Japanese shops were standing, although most of their tile roofs had slid off into the street, making walking rather difficult. The writer still hatless and coatless, once thought of purchasing a cap or straw hat at one of the numerous shops but the constantly recurring quakes kept everybody away from the buildings.

"Four stations south of Tokio, $2\frac{1}{2}$ miles, we saw the first distortion of the electric line running from Tokio to Yokohama. From here on, the quake was of incredible violence. As we walked along the railroad road bed, we noted factories on either side, completely demolished. The railway semaphores were frequently overturned and prostrate across the rails.

"At Omori, half way to Yokohama, where many foreigners resided, I stopped a moment to learn the news. No one had

been hurt at Omori, although every one was badly shaken and at four o'clock they were making preparations to sleep on the lawn. At Omori, the writer began to realize that Yokohama and other points south of Tokio had received a very much more severe shock. An ominous haze enveloped the horizon in the direction of Yokomaha. Several factories all in flames or already burned out were passed. At Kawasaki, the G. E. plant was still intact, except for what I supposed was the main office building, composed chiefly of windows, which had simply fallen inward on itself, so that it was a total wreck. This plant was situated in the center of a large number of rice fields and was bounded on the east by the railroad. It may possibly have escaped the flames, although the smallest spark from the burning Japanese village to the east of the railroad would have started a fire which would have consumed the entire plant, as there was no one to put their foot on an incipient blaze. At this point there is a river, which during the flood season, spreads out to a width of about one-half mile. The long steel bridge at this point looked like a futurist painting. The various arches were out of alignment, the piers, were in some cases raised up, in other cases they had sunk into the river bed, the rails were humped like camels' backs or twisted until they resembled a snake. However, the ties held them parallel so that an occasional handcar, carrying Japanese officials, was able to get through.

"At seven o'clock Saturday evening I reached Konagawa, one mile north of Yokohama station. Further progress became impossible. The Standard Oil Company tanks are situated there and they were a veritable roaring volcano of flame. Oil was floating down the canal at this point, burning merrily and every fishing boat, sampan and lighter was burning. It was a real river of liquid fire. Konagawa station was deserted and abandoned to the flames. There was one street car at this point, as yet not touched by the flames.

"Yokohama station was completely enveloped in flame and all of the warehouses and lumber yards between the Standard oil tanks and the Yokohama station were burned. Although the fire on the left of the road had burned itself out, it was impossible to proceed even down the center of the street. We had walked approximately 20 miles and were two miles from the foreign settlement in Yokohama and the Bluff. As you can readily see, that last two miles was utterly impassable. Tired as we were, we were forced to detour fifteen miles through the hills to the west of Yokohama, in order to come in by way of the canal that passed the Negishi race course. Even in the open country the evidences of the quake were appalling. In many places, the road bed had simply dropped down from eight to ten feet and we were forced to plod through the rice fields on the side. In other places where the road had been cut through a gap, the whole hillside had slid into the road. We were forced to climb over these giant landslides which we did with the greatest possible agility for you will please remember the shocks were recurring constantly and having tramped this far, we had no intention of being buried beneath succeeding landslides, if we could help it.

"Whenever we reached a Japanese village, progress became even more difficult for in every case, the shops had simply dropped forward into the road way. We kept the road beneath us by following the line of tiles made by fallen roofs.

"Finally after a walk of thirty-five miles we reached the southern outskirts of Yokohama. The scene from the hill on which we stood is utterly unimaginable. What had been a city of nearly half a million that morning was now as complete a desert as the heart of the Sahara. With the exception of perhaps six Japanese who had probably taken refuge in one of the numerous canals, not a living thing was to be seen,

and not one solitary building was standing. The only route we could follow was the street car line leading from past the prison northward to the city.

"Tokio had received a mild thrill compared to the upheaval in Yokohama. The street car rails were out of alignment, twisted or humped, the street cars had been completely burned and nothing was left but the trucks and a mass of tangled scorched wires. Nothing remained of the common Japanese push carts but an outline in ashes and the steel rims.

"There were many cracks in the earth, a foot or more wide and possibly ten feet deep. In several instances, like a trapper reading the signs in the snow, we could see where

square. Thousands of Japanese had succeeded in reaching this little oasis, but countless more thousands never had a chance to even get started. The writer reached this park at 2 o'clock in the morning, hatless, coatless, shoeless and completely exhausted. Here I learned that Mrs. Middleton had been seen in the park after the quake and was presumably as safe as any one. From 2 to 4 a. m. I lay in the mud of the base ball field, too tired to think or even move or sleep.

"At 4 o'clock it became light enough to make it possible to walk around in the park. Only those who have been in Japan will realize what the park must have been. Immediately after the quake, the water mains had burst, so that the



Fearful Havoc Wrought by the Earthquake in Tokio. The Street at the Right, "Ginza," Meaning Street of Silver, So Called Because of the Great Amount of Silver which Changed Hands Daily in the Shops.

Japanese messengers on bicycles had suddenly encountered a crack into which they had pitched. In every instance, the front wheel of the bicycle had been demolished.

"Of course, there were no electric lights nor were they needed as a dense pall hung over the entire region and reflected the glow from the burning oil tanks at Konagawa.

"Please forgive any egotism when the writer points out that we all experienced the same feeling as Napoleon must have felt when he gazed on burning Moscow, except that Moscow was merely burned while even the topographical features of Yokohama were almost unrecognizable. We found our way to the city park by keeping either the disrupted car line or the canals constantly in sight.

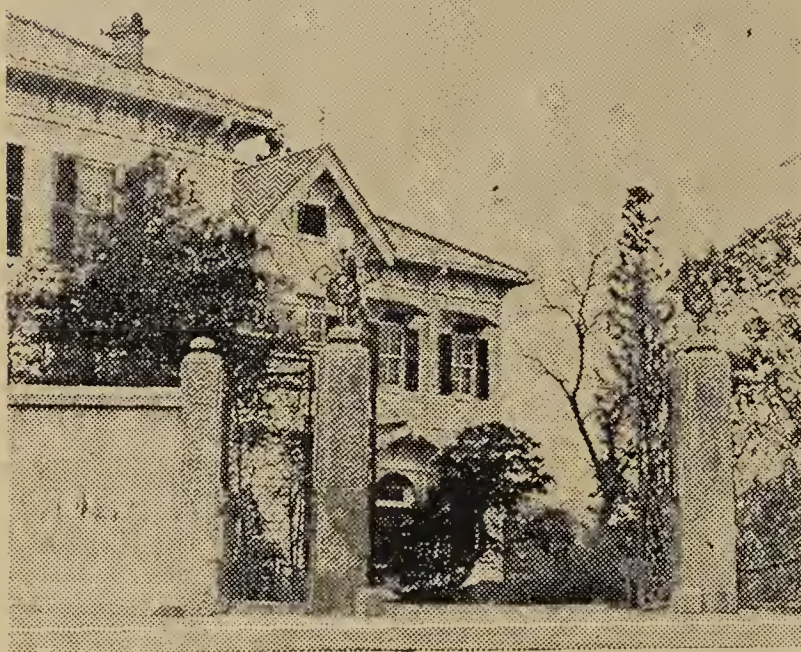
"Yokohama Park is approximately one block and a half

park was a sea of filthy, soupy mud, ranging in depth from two inches to five feet.

"I crisscrossed the park in every direction calling for my wife, but was unable to locate her. Finally at eight o'clock Sunday morning, our Japanese cook and her husband saw me and told me she had just been taken aboard the steamship 'Empress of Australia.'

"From the northeast corner of the park I started to the land end of the dock. To get there it was necessary to climb over the ruins of the chartered bank of India, Australia and Japan. This building was composed of blocks of lime stone from 4 to 6 ft. thick at the base. It was probably the most solidly built structure in Yokohama, yet it had been shaken down into cubes possibly four feet square, which

completely filled the two streets on each side. From this pile of debris to the dock was a distance of one American block, yet in this short space, within sight of the ocean and escape, there were seven charred corpses. A Mr. Potter of the Associated Oil Company counted sixty-seven bodies between the Electric Station (Sakuragicho) and the Dock. The Dock itself was almost completely submerged. The writer succeeded in reaching the steel inventor by jumping across open spaces on floating timbers and by alternately, wading, swimming and scrambling to the far end, which still stood. The steel inventor was jammed against the stern of the Empress of Australia and a steel hawser, presumably from this boat had fouled one of the propellers of the Empress, so that she



United States Embassy in Tokio as it Appeared before the Earthquake.

was nearly helpless. Looking seaward, only the land end of the breakwater and portions of the light house marking the entrance, were visible. The rest had sunk out of sight. Almost immediately after reaching the Empress, I discovered my wife, barefooted, hatless and clad only in the remains of a house dress and a rain coat.

"Once aboard the lugger and the girl was mine."

"Because I left Tokio within an hour of the first terrific shock, I can not give a personal report on other conditions but I am certain that the Takata building did not collapse. (Note, later reports indicate this building was destroyed.) It may have burned, as the headquarters of the Imperial Government Railways were directly across the street and were housed in a very large wooden building. Tokio received only slight damage from the quake but the broken mains and corresponding lack of pressure, as well as the pitifully inadequate fire fighting apparatus made its destruction by fire inevitable.

"All through the second night while aboard the Empress a sullen ominous glow like a sunset hung on the northern horizon. As Tokio was 20 miles away the only inference was that a wide-spread gigantic fire was raging. Yokohama is an utter waste. The breakwater is gone, the docks are gone, the streets are covered with debris or landslides, all wooden bridges are burned, steel structures are badly shaken and out of place. There is no water supply and there must be thousands of corpses buried beneath the building stones and bricks, which would make habitation anywhere in the vicinity of Yokohama extremely precarious.

"It seems to the writer as though it would be more probable that a new Yokohama would have to be built somewhat to the north of the present site. Tokio will be rebuilt and should be infinitely a finer city than that which was just destroyed.

"Just as there was an industrial slump in America at the outbreak of the war which was followed by a rush of large orders, so it seems to the writer that business with Japan will become very brisk in a short time, especially as regards steel, building materials and machinery.

"Upon our arrival at Kobe I immediately reported to the Takata office, announcing the escape of all Westinghouse and Takata employes from the quake.

"We then decided that the better course for us was to return to America.

"Mrs. Middleton had had a far more harrowing experience than the writer being the only person to escape without at least minor injuries, from the three story building in which we resided.

"Mr. Kaylor, manager for the orient of the Westinghouse Air Brake Company, as well as Mr. and Mrs. George Pierce of the same company, returned on the President Jefferson. In fact the Jefferson was so crowded with engineers, salesmen, representatives, etc., and their families that practically all cabins were used exclusively by the women while the men found the soft spots on the deck and rolled up in blankets.

"In all probability Mr. Baker's house and everything but his personal documents and perhaps a suitcase of clothing were burned.

"Strange to say the house in Yokohama, occupied by Messrs. Johnson and McManigal and their families, was re-



The Westinghouse Staff at Tokio Office: Left to Right, S. Nishiyaki, I. E. Baker, C. A. Johnson, R. D. McManigal, and in the rear, Mr. Middleton, the Author of this Narrative.

ported by Mr. Colton, their landlord, as the only house left standing and unburned on the bluff. However, when the Jefferson returned to Yokohama on Tuesday, we could not discover the house by means of a field glass. Even though it might be standing it would surely have been looted by Japanese marauders or by escaped Koreans."

HUDSON RIVER DOINGS.

Reports from the Hudson River District say that all the plants operating between Haverstraw and Mechanicsville on both sides of the river are working energetically to full capacity using every man and every ton of coal that can be used in making and burning of brick so as to lay up a reserve supply at New York City to carry through from the close of the navigation this winter till the opening of the river again next spring. Out of the present strenuous effort it is hoped to put 650 million common brick into the New York reserve supply for this winter as compared to 400 million last year.

Written for THE CLAY-WORKER.

CERAMIC INDUSTRY PROMINENT AT CHEMICAL EXPOSITION.



THE GROWING IMPORTANCE of the ceramic industry as a basic branch of activity has been shown more and more at recent annual chemical expositions at New York, and the 1923 exhibit held at the Grand Central Palace, September 17-22, inclusive, demonstrated this fact even to a greater extent. Neglecting the specific showing of products and equipment, which carried a wide range of ceramic materials, practically every function of any moment during the week had with it some semblance of ceramic interest, while prominent men in the industry had much to do with the success attending the exposition.

Ceramic day, Wednesday, September 19, was of more than ordinary interest, representing the fall meeting of the American Ceramic Society. The program, as arranged, was carried out in excellent fashion during the afternoon session in the conference room, and a number of leading men in the industry took part in the discussions. A symposium on kiln management with respect to fuel economy was one of the features of the occasion, and brought out some valuable points.

In connection with the last noted topic, a report was given covering the findings of a co-operative investigation made by the Refractories Manufacturers' Association and the United States Bureau of Mines, by Frederick W. Donahoe, secretary of the first mentioned organization. This showed, conclusively, the need for intelligent fuel handling in connection with kiln firing, and the saving to be derived under proper and consistent management. George A. Bole of the United States Bureau of Mines gave an interesting talk on kiln firing, illustrating the economies to be secured through the use of modern methods, perfected equipment and able workmen. An instructive paper was presented by Henry H. Hyde of the Flynn & Emrich Co., Baltimore, Md., on the subject of the application of stokers of hand-type to ceramic kilns. He described the possibilities of the use of such equipment and pointed out the application in line of future development.

The following section of the program was given over to industrial art, with papers by Richard F. Bach, Curator Industrial Arts, Metropolitan Museum, New York, and A. E. O. Munsell. The first noted dealt with the work of advanced industrial art with respect to the ceramic industries, showing clearly the progress which has been made and is to be made in this direction. The other talk covered the matter of color and color measurement.

The concluding portion of the afternoon program was devoted to refractories, with two papers of technical character. R. M. Howe of the Kier Fire Brick Co., Pittsburgh, Pa., had an interesting paper captioned, "The Properties of Some Commercial Refractories," showing the results of tests and investigations of materials of this character, the burning life and behavior under ordinary and heavy service. The second paper was by W. F. Rochow of the Harbison-Walker Refractories Co., of the same city, covering the manufacture of fire brick and other refractory shapes, and the different features to be considered in high grade refractory production.

Dinner.

An enjoyable get-together dinner was held at the Hotel Commodore on the same day, with a fine representation of ceramic interests from all parts of the country. The delegation from New Jersey was particularly prominent, as nat-

urally to be expected with the meeting place so near at hand. Among those present were: Ross C. Purdy, general secretary of the American Ceramic Society; Professor George H. Brown, director, Department of Ceramics, Rutgers College, New Brunswick, N. J.; R. H. Minton, General Ceramics Co., Metuchen, N. J.; George A. Bole, United States Bureau of Mines, Washington, D. C.; Charles A. Bloomfield, Metuchen, N. J.; Fred A. Whitaker, George Simcoe and T. A. Klinefelter. All in all, close to 100 were in attendance and the affair was a pronounced success.

The evening was given over to the exposition, inspecting the various displays and visiting the 'motion picture hall. Here a number of reels were shown devoted to ceramic work, particularly with respect to fire clay refractories and abrasive materials. Through the courtesy of the Ontario Department of Mines, an interesting and instructive film was given on talc mining in the Ontario province.

Students' Course.

One of the features of the exposition was the students' course in practical engineering and chemistry, conducted from day to day during the week under the direction of Professor W. T. Read, Yale University. This was the first time that such a course has been carried out in conjunction with the exposition and the success attending undoubtedly will make it one of the prominent branches of activity in future shows. A daily average attendance of about 200 students from various colleges and universities took part in the work. While in the city, they were housed in the dormitories at Columbia University.

The program for the course included much of interest in ceramics and a number of prominent men in this industry gave freely of their time and knowledge to make the different meetings a success. Among these were M. A. Knight, of Maurice A. Knight, East Akron, Ohio, who spoke on silica ware; O. I. Chormann of the Pfaudler Co., Rochester, N. Y., who dealt with glass enameled steel products as materials of construction; P. S. Kingsbury of the General Ceramics Co., New York, who presented interesting information on silica ware; and Ross C. Purdy, American Ceramic Society, who spoke before the students on such ceramic materials as clay, enameled ware, glass, etc. Crushing and grinding were among the subjects coming in for more detailed consideration, and H. F. Kleinfeldt of the Abbe Engineering Co., New York, as well as Harlowe Hardinge of the Hardinge Co., same city, tendered some valuable and practical information in these lines.

All in all, about 30 well known authorities in different branches of industry assisted in the movement and particular praise is due for the marked success attending their efforts.

Exhibits.

To speak briefly of the exhibits, close to 400 individual displays occupied the different booths in the convention hall. Many of these had to do with ceramic equipment and materials, such as porcelain, chemical stoneware, glassware, laboratory apparatus, grinding and pulverizing machinery, filter presses and so on.

The 1923 Chemical Exposition marked the ninth such event under the same management, eight of which have been held in New York and the other in Chicago. The attendance for the show just closed was one of the largest yet recorded, and it is stated that a heavy volume of business was transacted, in addition to the educational phases of the exposition. The next such affair will be held in 1925, during the week of September 28 to October 3, at the Grand Central Palace.

There is not enough face brick being sold, nor enough common brick being used in the great home building drive of the day.

MARKETING THE PRODUCT—FROM THE STAND-POINT OF THE MANUFACTURER.

By John W. Sibley, General Sales Manager, Birmingham Clay Products Company.

A Paper Read before the Southern Division of the American Face Brick Association, at New Orleans, October 17, 1923.

NO ONE CAN gainsay the importance of manufacturing as high grade product as is possible, exercising care in assorting both as to color tones and quality; or the maintenance of maximum plant operation, if face brick are to be produced at an economical cost; but the success of the business after all is the marketing of the product at a fair profit to those who have invested the capital in the enterprise.

No set of hard and fast rules can be laid down for everyone, as individuality is as potent a factor in the face brick game as it is in other lines of business. However, there are certain fundamental principles that apply to all to a greater or less degree.

To my mind the prime essential is absolute and whole-souled co-operation between the manufacturing and sales departments, with the common purpose of prompt service and faithful performance of the sales contract, as such inevitably means satisfied customers and that is the best asset the salesmanager can have in expanding as well as holding the trade.

For example, when an order is secured and sent to the plant for execution, arrangements should be made to ship on the date promised, and the color and texture provided for in the order. If it is a "quick shipment" order and the exact type of brick is not in stock, do not ship something the plant superintendent thinks you might get by with (sometimes you can, when the job is hanging fire, but at the cost of a customer's good will) but write your customer the facts and tell him just when you can ship at the same time suggesting that if he cannot wait he might be able to use an excellent substitute like the sample you are expressing him, which you feel sure he will find satisfactory and produce a handsome effect in the wall. I cannot stress too strongly the importance of educating the trade to the fact that you will always come clean with them in your dealings.

When a customer sends in an order for a minimum car, it frequently wins a friend to suggest that he be sure his full requirements are covered, as it would save him heavy freight or express charges should he later find a few hundred brick are needed to complete the job. All manufacturers have such experiences from time to time and the customer invariably gets sore because of the inevitable delay in shipping less than carload orders. He thinks you should shut down the plant, if necessary, to ease his pain.

In the next place it is vitally important that the sales department be furnished regularly with accurate inventories of the stock on hand in the sheds or warehouses at the factory so that proper care may be taken not to promise deliveries which cannot be made on time. The fellow who banks too surely on what the kilns will turn out is frequently "laying up trouble for himself against the day of wrath."

Many years' experience in face and paving brick along this line at the first plant I built taught me some very valuable lessons (with emphasis on the valuable) so when the face brick plant was built later at Sibleyville before any effort was made to sell them, we accumulated a stock of over a million brick and then our first large order was for second quality brick for the rear walls of a sky-scraper at Birmingham. We shipped mostly our so-called first quality brick, which gave the owner and architect a good taste and really

helped us learn how to improve the quality of our product, so that when we got regularly on the market we could build up a reputation for high grade product that has proven our best asset. All manufacturers should persistently endeavor to maintain the highest standard as it lightens the burdens of the sales department.

Let the superintendent at the factory and all his help adopt a Coue slogan: "Every day in every way our brick must be made better and better." Half the fight will then be won in marketing the product on a profitable basis.

The next essential for the sales department is to be thoroughly sold itself on the quality, beauty and general merits of its own product. An expert salesmanager in other lines may and often will prove an utter failure in marketing face brick. He should by frequent visits to the plant become thoroughly conversant with the process of manufacture from raw material to the finished product, unless as sometimes is the case he has had a practical education by prior service at the factory. In other words, the salesmanager must have passion for face brick in general and his own make in particular.

In this day of keen competition from other kinds of build



John W. Sibley, Birmingham, Ala.

ing materials, the salesmanager for face brick will find himself "left at the post," if he fails to keep in close touch the publicity propaganda as carried on by the service department of the American Face Brick Association.

None of us take as full advantage of this splendid "First Aid to Sales" as we should, but whether a member of the Association or not every face brick manufacturer in America reaps the benefit of the aggressive and constructive educational work done under the matchless leadership of Dr. Mars.

If every manufacturer of face brick would join the Association the field of usefulness could be greatly widened.

For our own part we follow up consistently the prospect bulletins sent out by the Association and in quite a number of cases nice sales of our own brick have been made and in practically all some brand of face brick, which benefits relatively all of us.

I remember one instance where a lady in Mississippi wrote to the department in Chicago that she wanted to buy one of their home plans and it happened to be that of my own bungalow. After a correspondence and sending of samples she was soon sold on "Sibley Brick" and later her husband being on the building committee of a new church in her town, why

as a matter of course Sibley Brick had to be used on that job also and got an order for a hundred thousand brick.

But if we are to reap a larger benefit from the work of the Association we must follow it up in a local campaign. It is preferable, as in the case of the Birmingham members, to have the local advertising of an impersonal character, setting forth concisely, tersely and pungently the various reasons why face brick should be used. Once the consumer is convinced that face brick is what he needs, it is then a matter of taste and individual salesmanship who gets the order.

Many say offhand that local advertising is no good. Of course much money can be wasted when the campaign is not wisely planned and right here is where the Association helps most by furnishing dope and mats to illustrate same.

It Pays to Advertise.

Some one asked the late J. P. Morgan once, if he thought it paid a manufacturer to advertise. His characteristic reply was: "The fellow who does not advertise will soon have the sheriff doing it for him."

Recently the immortal Andy Gump, who wears no man's collar and is 100 per cent for the people, said: "To run a business without advertising is like running a car without oil. It may start all right, but it will start to squeak before you finish the trip."

However, with all this a word of caution is not amiss. "Truth in advertising is a slogan that says a lot in three words." With so much intensive publicity as to many materials that are manifestly inferior, people are prone to become suspicious unless service and goods measure fully up to the pre-sale promises. Faith once destroyed is seldom ever revived.

Talk enthusiastically about the merits of your product, but like the rooster be prepared to back up your "crowing" with "spurs" of facts. A close adherence to the principle of the Golden Rule is not only the best but the safest policy.

Some one has well said that "sensations are not business, and traveling down the road to normalcy means holding the old trade while the new ones are added in regular course. New business is necessary. From it comes the normal growth of the business that proves your methods and service to be satisfactory. Hold the old ones, then figure on adding the new ones. It won't be long before you will find business has taken on a different look."

Another important fact for the sales department to keep constantly in mind is that your plant could not supply all the demand. Others must and will have a fair share of the business.

A Plea for Co-operation.

In the measure that you and your competitors co-operate in accordance with the code of ethics of the American Face Brick Association, so will the business be conducted on a just and honorable basis, with a fair and reasonable profit to the manufacturer and full value received in service and material to the consuming public.

Both the laws of the land and moral righteousness forbid collusion and fixing of prices in restraint of trade. But the greatest political economists and statesmen of this generation as well as former ones agree that in the end internecine price slashing is as harmful, because sooner or later it destroys industry, wastes capital and deprives deserving labor of a means of livelihood.

The man who ruthlessly cuts prices to secure an order is selling merely for the sake of selling and not for the sake of making a legitimate profit and giving the customer service.

Any man with an ounce of brains knows that no business can do business without profit and last long. Any sales department that becomes obsessed with the idea and purpose

of trying "to put some competitor out of business" had better look out that he does not first put himself out of business.

I wish to cordially endorse the following trenchant paragraphs recently promulgated in a bulletin of one of the largest producers in the world:

The Evils of Price Cutting.

"The price cutter is worse than a criminal. He is a fool. He not only pulls down the standing of his goods; he pulls down himself and his whole trade. He scuttles the ship in which he, himself, is afloat.

"Nothing is so easy as to cut prices; and nothing is so hard as to get them back when once they have been pulled down.

"No manufacturer can permanently keep up the standard of his goods if the price is persistently cut. Pretty soon he is compelled to use cheaper materials or cut down the wages of his workers, usually both.

"The man who cuts prices puts up the sign: 'This way to the junk heap!' He admits his own failure as a salesman. He admits he cannot win by fighting fair. He brands himself as a hitter below the belt.

"If the business world were dominated by price cutters, there would be no business at all. Price cutting, in fact, is not business any more than smallpox is health."

Again, success in salesmanship cannot be attained through knocking the product of your competitor in the face brick business. To resort to such practice usually arouses sympathy for the other fellow and if both indulge in the practice it discredits face brick in the eyes of the consumer and often results in his using some substitute material. It is the easiest way known to depress the market and throttle the business.

As one of our enthusiastic baseball fans puts it—let us take the loss of an order philosophically and in good nature, saying: "Well, we can't win 'em all, but we'll get 'em tomorrow."

In the evolution of things and readjustments resulting from the World War, I have come to change my views regarding sales agencies and the general distribution of the product.

I believe in the South practically every manufacturer of face brick is largely dependent upon inter-state shipments for the marketing of his product and the pre-war practice was to confine sales exclusively to one agency or dealer for each state and sometimes one agent covered several states.

Encouraging the Dealer.

In recent years many building supply dealers have added face brick departments, not only for less than carload retail trade, but wholesale to the consuming public. In a recent address President J. M. Adams suggested these supply dealers should be cultivated, for if every one of them bought only one car it would mean the sale of many thousands in the aggregate throughout the country.

In our own local market at Birmingham, Ala., a couple of years ago we inaugurated the plan of allowing supply dealers who carried our brick in stock for the retail trade, to also sell wholesale to contractors who bought other supplies from them and allow them the same commission as to other agents. Where we sold direct we charged the customer the regular gross price. At first this met with strenuous opposition and condemnation of some of our good competing manufacturers, but the universal approval of the supply dealers and many contractors who felt they should not be compelled to buy through one exclusive dealer.

The result has been a fourfold increase in our local sales, without a single cutting of price on our part. I am satisfied that a very large part of the increase in our local sales was due to the fact that dealers became boosters for the use of

face brick, instead of simply carrying in stock a minimum quantity to meet the demand for a few brick mantels. Another happy result has been a heavy increase in orders from the dealers for stock to meet the rapidly increasing demand from the retail trade.

I am gratified to say that one of my largest competitors and good neighbors has come to see the wisdom of our policy for he has recently adopted the same himself and I predict an increase in his local trade also. Every time he sells a job it helps me and vice versa, for the more face brick are used, the more the public will appreciate their beauty and merits, which of course means an increased demand.

Last year we adopted a similar policy in a measure for our foreign business. We have a general agent in each state of the territory we serve, but in all the larger cities and towns in his territory we have him appoint local dealers as sub-agents for handling our brick, though we do not restrict them to our line. The commission is split on a fair basis, but of course, where the general agent makes a sale direct he gets the entire commission.

At first the state agents demurred, but actual results have convinced them that many orders are secured that might not materialize otherwise. This plan was really originated by our state agent in Florida, Mr. W. R. Fuller, of Tampa, who on his own motion made arrangements with the supply and lumber dealers throughout the state to handle our brick on a co-operative basis and the result has been the largest

business from his territory of any outside of our home market at Birmingham.

Primarily the object of my sales organization is to sell "SIBLEY" brick, but in any event we want every job to use face brick and if we can't get it we want it to go to our competitor. An idle brick plant has a tendency to make the owner's brain the devil's workshop, so we are selfish in wanting our competitors to have a reasonable and fair share of business.

After an experience of 35 years, I can truly say I love the brick game, and I think you will all agree it is very exhilarating. I began in my teens in 1888 manufacturing common brick at Coaldale, Ala. In 1895 the plant was converted into shale paving brick, the pioneer in the South, and the streets and roads built of same have given a service unexcelled by any other paving material, of which I am justly proud. In 1905, I built the face brick plant at Sibleyville about a mile from Coaldale, thus fulfilling the ambition of my youth to contribute in part to the architecture of the South a material that would be permanent and artistic monuments of a purpose to serve my fellow man in a pleasing and acceptable manner.

Our calling is an honorable one and opens an avenue for greater achievement for the welfare and happiness of mankind than can be measured by the profits in dollars.

If anything I have said may serve to encourage others to strive to lift the marketing of the product upon a higher plane, I shall feel the effort was a real labor of love and that my trespass upon your patience has not been in vain.

OIL FIRING CLAY PRODUCTS

By W. D. Richardson.

Part 2.

WHEN THE MANUFACTURER of clay products has determined by thorough investigation that oil is the cheapest fuel available at his plant, taking everything into consideration, and that it is likely to be the cheapest for some years to come, he still has a bigger problem in hand than he probably realizes, in deciding upon the best system and appliances for his special conditions and purposes, and when he finds what a large number of burners and other devices for oil firing are on the market, he will likely be more puzzled than ever. Even then he will hardly appreciate the fact that any of these systems require more skill and experience to get the best results than he had any idea of. This does not mean that he need fear any serious difficulty in adopting oil for fuel.

It is not expected that this brief treatise will clear up everything, as each situation is, in a measure, a separate problem, but it is our aim to present, in a concise form, to the readers of *The Clay-Worker*, such general information as will enable them to take up the subject intelligently and perhaps save themselves from some of the mistakes that others have made.

The things to be learned in the burning of liquid fuel have been carefully worked out by engineers and experienced operators, much has been written upon the subject in the past few years, though most of it is not easily accessible to the manufacturer who wants to adopt oil firing, and much of it also is more or less ex-parte—written by patentees or manufacturers of patented appliances. This does not mean that valuable information has not been put out by those who have a pecuniary interest in the promotion of this fuel. We wish to acknowledge our indebtedness to many of these people whom we have consulted and some of whom have kindly loaned the cuts for illustration.

In the early days of oil firing some difficulties were encountered that caused more or less trouble. In the first place,

the crude oil then used contained, as do all fuel oils today, some foreign particles that clogged in valves and burners. Also, the oil was of high viscosity and would not flow well, especially in cold weather. By using proper strainers the foreign particles are removed and by heating the oil the viscosity is reduced and the oil flows freely to burners.

Moreover, as the oil then flowed to the burners by gravity from an elevated tank, there was trouble with the heavy oils from the coking up of lines and the fires occasionally going out. Now, however, this difficulty of coking of lines has been overcome by keeping the oil in continuous circulation by pumps that maintain a steady pressure, without pulsations.

In the early days also steam was generally employed for atomizing the oil, and the uncovered steam lines from the boiler room to the kilns, especially in cold weather, caused condensations—and water is obviously not a good constituent of fuel. Covering the steam pipes, trapping out the water and, in some cases, superheating the steam have overcome this trouble, though steam atomizing is not now so generally used on brick kilns.

Another difficulty of oil firing that was experienced in burning brick was in maintaining a low fire during water-smoking. Burners were of such a type and size that to operate them properly the oil and steam had to be supplied in definite quantity and pressure, which gave too high a heat for water-smoking. Obviously an excess of steam would not be desirable and without steam the oil was not atomized, burned with a smoky flame and the burners frequently became clogged and had to be relighted. Present systems, atomizing with steam or air, now use a special burner tip for low fire, without reducing the pressure of air or steam or oil. Mechanical atomizers also can be easily regulated for low and high fire. So that one, who adopts oil firing of kilns today, with any of the modern systems or burners, is relieved of many of the difficulties that were encountered by the early users of this fuel.

Another peculiarity of fuel oil that must be taken into

consideration, even with the most approved systems, is that the intimate and immediate mixture of air with this concentrated fuel produces perfect combustion and a very high temperature at a short distance from the mouth of the furnace. This intense local heat is hard on furnace refractories and, if not properly counteracted, may be too severe on the ware nearest to the fire. This difficulty, which was quite serious in the early days of oil firing, has been placed under such control that very little complaint is now heard of it. Proper application of the secondary air and regulation of draft, with larger combustion chamber and passage therefrom, and careful watching of goods that have a narrow vitrification range, give satisfactory results.

Atomizing the Oil.

In order to properly burn a concentrated fuel, like oil, the oil must be thoroughly atomized, so that every particle of it can be brought into intimate contact with the requisite amount of air for combustion. The atomizing device is called the burner.

Oil Burners.

There are a large number of burners now on the market and various methods of bringing the oil and air or steam to

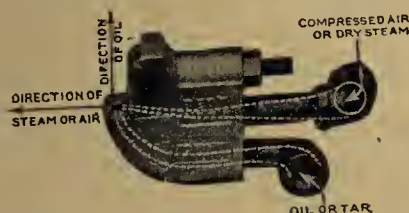


Fig. 1. W. N. Best Oil Burner.

these burners. Much mechanical and engineering ability has been expended on these so-called "systems." A burner should be capable of atomizing any fuel oil or any crude oil without carbonizing.

Oil burners are divided into three general classes, those that atomize the oil by steam, those that atomize by air and the mechanical atomizer.

Steam Atomizing Burners are of two well-defined groups, the outside mixing and the inside mixing. The first group includes those burners in which the steam comes in contact with the atomizing oil after issuing from the burner tip. In some of these designs the steam issued through a horizontal slot directly under the oil slot. In other designs the oil is forced up through a narrow slot, steam issues horizontally from an adjacent slot and strikes the oil stream at right angles. In the second group the steam and oil mixes in the burner before issuing in the tip. Atomizing the oil externally tends to prevent clogging and carbonizing. Inside atomizing or mixing produces combustion closer to the mouth of the furnace. Representative types of these burners will be described and illustrated.

The outside atomizing burner, Fig. 1, where the air comes in contact with the atomizing oil after issuing from the burner tip, was designed by Dr. W. N. Best and is made by the W. N. Best Corporation, 11 Broadway, New York. The upper lip is movable and in case dirt lodges in the oil line, the lip is moved outward until the orifice is covered. This allows the steam to blow back through the oil line, clearing the orifice. The steam, or air, meets the oil at right angles, thus thoroughly atomizing the oil externally, which helps to keep the burner clean, free from clogging or carbonizing. Air or dry steam from 15 lbs. up can be used to atomize the oil. The burner having a siphoning action requires but very low oil pressure.

A well-known burner of the inside-mixing type, shown in Fig. 2, is made by the Tate-Jones Co., Pittsburgh. The oil

supply is controlled by a needle valve in the burner proper and the air or steam is regulated by a valve on the supply line. Either steam or compressed air can be used for atomizing the oil and the burner will operate on a wide range of pressure—5 lbs. and above on the oil and 10 lbs. and above on the atomizing agent. The oil and air leave the lip of this burner in a finely mixed cone-shaped spray, giving instantaneous and complete combustion.

A burner of the inside mixing type that is much used on brick kilns, especially on the Pacific Coast, is the Schurs Burner, Fig. 3, made by the Schurs Oil Burner Co., Los Angeles, Calif. For up-draft brick kilns steam is recommended for atomizing the oil. For down-draft kilns air or steam may be used. The burner requires 25 lbs. oil pressure. If air is used for atomizing, the pressure should be 20 to 30 lbs. If steam is used, the higher the pressure (and therefore the dryer) the better. The burner has an adjustable tip for low and high pressure.

Another burner of the inside-mixing type, made by John Foerst & Sons Co., Bayonne, N. J., which gives a conical or fantail flame, as may be desired.

Still another inside-mixing burner, made by the National Airoil Burner Co., Philadelphia, is shown in Fig. 4. This is essentially a low pressure burner, since the siphon action of

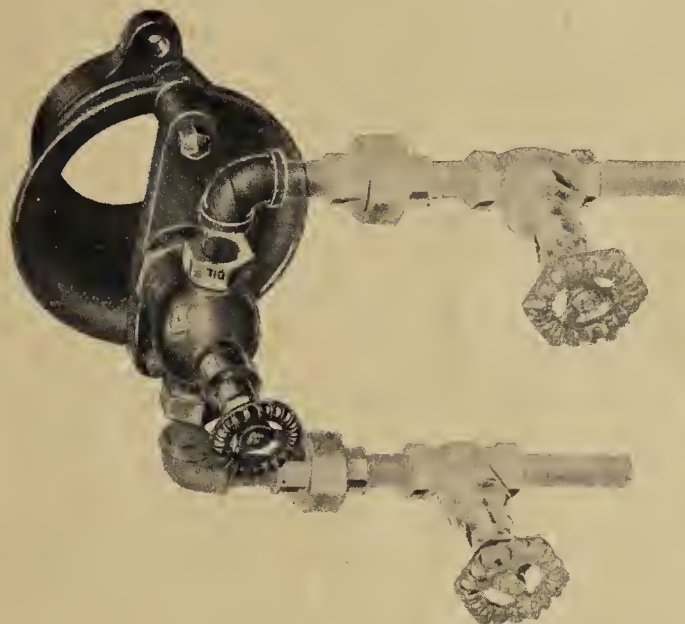


Fig. 2. Burner Made by Tate-Jones Co.

the steam flow draws the oil into the burner, and as the oil pressure is low the steam pressure need not to be over 15 lbs.

Air Atomizing is especially indicated on light oils that do not require much preheating and for kilns that are distant from steam boilers. The air used for atomizing is not sufficient to burn the oil completely and additional or secondary air is admitted to combustion chamber through openings around or under the burner.

In one type of air atomizer the oil issues through a small central orifice and the air through a thin annular ring, or through small slots arranged around this orifice. In another type the air impinges against the oil at a sharp angle, thus breaking up and mixing the particles thoroughly with the air. The burners described and illustrated above will serve as representatives of air atomizers also.

In **Mechanical Atomizing** the oil is highly preheated and forced at high pressure through the burner. On the way to the orifice the oil passes through a specially designed tip in which it takes paths that give it a whirling motion when it leaves the burner. The effect of this high preheat and the whirling motion causes the oil to break up into exceedingly

fine particles, in which condition it mixes thoroughly with the air and burns completely. The tip is the essential feature of this burner. It consists of a central chamber with tangential slots leading to it. The pressure drives the oil through these slots at high velocity, and when it enters the chamber it acquires a rapid whirling motion.

Well-known burners of this type are the Coen Mechanical Oil Burner, made by the Coen Co., 112 Market St., San Francisco, and 50 Church St., New York, and the Bethlehem-Dahl Mechanical Oil Burning System, put out by the Bethlehem Shipbuilding Corporation, Bethlehem, Pa. A recent high pressure mechanical oil burner is being introduced by the Lalor Fuel Oil System Co., 527 Colvin St., Baltimore, Md.

Comparison of Atomizing Systems.

The three main systems for atomizing the oil, as well as



Fig. 3. Schurs Oil Burner, Which is in Common Use, Especially on the Pacific Coast.

the many variations of each system, have been developed to meet different conditions. No one of these systems is best for every condition and purpose, though all are similar in essential features. The fundamental factors are delivery of oil at a uniform pressure and free from water and foreign matter, absolute control of all the fuel and air entering the furnace and regulation of the air in proportion to the fuel required.

The steam atomizing burner excels in effectiveness and atomization, when the steam is at high pressure and dry. The equipment is simpler and steam has the advantage of giving a longer and less intense flame in the furnace. The air system is more expensive to install, where there is already a steam plant, but where oil and steam lines are long and burners at a number of points distant from boilers, the air system is preferable. Both systems use approximately

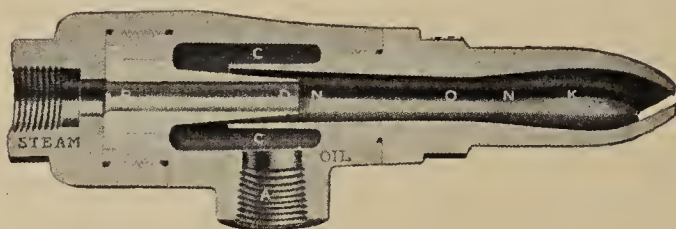


Fig. 4. The National Airoil Burner.

the same amount of steam for atomization, whether used directly for atomizing or indirectly for operating blowers. The advantage of low pressure air system, where steam power is used for driving the blowers, is that the heat of the exhaust steam is available for heating the oil and may be condensed and recovered. So that if the latent heat in the exhaust steam is taken into account, the actual energy required for atomizing the oil is practically negligible.

For both steam and air atomizing there are two systems, one high pressure and one low pressure. The trend seems to be for air at low pressure, the slow speed turbine blower being used instead of the air compressor.

Mechanical atomizing burners are used almost exclusively for marine boilers, though they may come into more extended use in land service and industrial heating. The loss of boiler feed water is a serious disadvantage in many situa-

tions. The mechanical burner does not require steam and is noiseless in operation. The steam used for heating the oil and for pumping, as in other systems, does not represent a loss in feed water, as the steam is condensed and returned to the boilers.

(To be continued).

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



ACCORDING TO REPORTS received here by government authorities a number of severe tests of brick-paved highways in various sections of the middle west have given most favorable results. Advices received from Professors J. B. Davidson and E. V. Collins, of Iowa State College, highly commend the use of brick for road paving. Their report says that the rela-

tion between road surfaces and pulling power necessary to move a load has been conclusively determined in a long series of tests with a team of horses hitched to the newly-invented dynamometer, an instrument for the accurate registration of the power of pulling animals. The experimenters used a wagon with a weight of 2,300 pounds and loaded it with 9,700 pounds of coal, to make the gross weight of 12,000 pounds, or six tons. Starting from the Des Moines River they drove the team to the city of Des Moines, making thorough tests on different types of roads.

On brick paving, old and worn, the load required a tractive pull of 290 pounds or almost two horse power. On smooth brick paving the energy necessary to move the load was only 200 pounds, or one and one-third horse power. On asphalt paving the tractive pull increased to 560 pounds, or four and two-thirds horse power, and on a comparatively steep grade the comparative pull on asphalt increased to 1,170 pounds, or almost eight horse power. These results, the investigators say, are greatly in favor of the brick paving. In the tests smooth brick paving ranked high in efficiency and asphalt paving ranged lowest among all paving types.

The tests are being made at the suggestion of the United States Department of Agriculture, primarily as a basis for compiling extensive statistics on the comparative pulling power of different classes of beasts of burden, and the power necessary to move loads on differently paved surfaces.

The clayworking industry continues its efforts to standardize its products as a means of lowering costs and increasing output. One of the most important moves in this direction is the recommendation, just made, of the standards committee of the Hollow Building Tile Association that the thirty-six sizes of building tile be reduced to thirteen. A standard weight with a variation of five per cent over or under the standard is suggested for the thirteen sizes the association asks be retained.

The U. S. Department of Commerce is assisting in the work of standardizing the hollow tile output, and a report on the subject is to be made at an early date. Speaking to the representative of "The Clay-Worker," one of the officials of the department said in referring to the plan to reduce the hollow tile sizes and styles:

"This is another important and decisive step in the Hoover plan to cut building construction costs through the elimination of waste in the hollow building tile industry."

Builders, he said, know how unnecessary are many of the sizes and styles in both tile and brick. Non-essential styles force up costs in the manufacturing plants and add much to the cost of doing business where any number of styles and sizes are made and carried by dealers and manufacturers.

The United States Tariff Commission announces that it

has found it necessary to postpone the hearings on magnesite brick until December 5. The hearings were scheduled for the first week in October. Following is the commission's announcement:

"Upon consideration of the application filed on the 14th day of September, 1923, by the Austro-American Magnesite Co., for a postponement of the hearing set by the United States Tariff Commission to be held on the 1st day of October 1923, in the investigation heretofore on the 11th day of August, 1923, ordered by the commission of the differences in cost of production of, and of all other facts and conditions pertinent, with respect to crude magnesite, caustic calcined magnesite, dead burned and grain magnesite, not suitable for manufacture into oxy-chloride cements, and magnesite brick.

"Ordered, That said hearing heretofore set to be held in said investigation at the office of the commission in Washington, D. C., at 10 o'clock a. m. on the 1st day of October, 1923, be, and the same is hereby postponed until 10 o'clock a. m. on the 5th day of December, 1923, at the same place;

"Ordered further, That public notice of this postponement shall be given prior to the 1st day of October, 1923, by posting a copy of this order for not less than 10 days at the principal office of the commission in the city of Washington, D. C., and at the office of the commission at the port of New York, and by publishing a copy of this order in two successive issues of Treasury Decisions, published by the Department of the Treasury, and in one issue of Commerce Reports, published by the Department of Commerce, copies of which said publications are obtainable from the Superintendent of Documents of the Government Printing Office in Washington, D. C."

Practically all of Washington's manual training schools have commenced full courses of instruction in bricklaying. According to a statement of the superintendent of the District of Columbia schools, "the well-remunerated art of laying bricks will hereafter be taught in all of the manual training school branches of the city. Graduates are promised salaries ranging from \$12 to \$14 a day and will also be given an opportunity to earn money at bricklaying while under instruction. A common school education is the only requirement for admission to the bricklaying classes. The high wages paid bricklayers at the present time are expected to attract a large number of bricklaying students."

It is understood that the city bricklayers' unions and organized labor generally are strongly opposed to the teaching of the trade in the schools.

The industrial division of the Census Bureau reports having received advices from the eastern Ohio section to the effect that the manufacture of brick and other clay products are in a remarkably prosperous condition. Brick plants in that section, says the bureau, are working on back orders, a large number of which are reported to be on hand, with a heavy fall demand in prospect. The greater part of the product of brick plants in the vicinity of Canton is sold for the coming year, the bureau is informed.

The Department of Commerce report on exports of brick and other clay products for the eight months of the present year ended on September 1, shows substantial increases in every line. Following are the department's official figures showing the sales for the eight months named as compared with those for the corresponding period of last year:

EIGHT MONTHS ENDING AUGUST—

	1922	1923
Fire-clay bricks.....M	19,255 \$901,628	30,183 \$1,244,528
Other refractory bricks.....do	2,653 172,800	4,106 287,796
Refractory shapes.....Lb.	4,714,121 86,610	18,372,516 341,941
Building bricks and hollow tile.....M	7,179 160,295	5,465 159,273
Wall and floor tiles.....Lb.	3,595,009 210,933	3,402,217 243,588

In this connection it is to be noted that imports of brick

and hollow building tile from foreign countries in the first eight months of this year totalled \$865,049.

Common brick prices in thirty-eight cities on September 1 are given by the Census Bureau as follows, per thousand:

Detroit	\$17.50	Saginaw	\$15.00
Bay City	16.00	Benton Harbor	16.00
Milwaukee	13.50	Waterloo	16.50
Council Bluffs	16.00	Des Moines	19.00
Kansas City, Mo.....	16.50	Pittsburgh	17.00
Cleveland	16.00	Akron	16.00
Lorain	23.50	Newark	18.00
Dayton	18.00	Grand Forks	13.50
Sioux Falls	18.00	Shreveport	15.00
San Antonio	15.50	Tucson	15.00
Seattle	20.00	Portland, Ore.	20.00
Scranton	25.00	Baltimore	20.00
Richmond, Va.	19.00	Fairmont	26.00
Columbia	12.00	Savannah	17.50
New Orleans	17.00	Fitchburg	24.00
Haverhill	24.00	Fall River	26.50
New London	32.00	Poughkeepsie	20.00
Albany	18.00	Schenectady	25.00
Rochester	17.75	Buffalo	23.00

Following are hollow tile prices on the same date (8x12x12):

Scranton	\$0.25	Baltimore	\$0.24
Richmond, Va.	.20	Fairmont	.26
Columbia	.18	New Orleans	.23
Sioux Falls	.19	Shreveport	.22
San Antonio	.23	Tucson	.18
Seattle	.20	Portland, Ore.	.20
Pittsburgh	.20	Erie	.24
Akron	.17	Lorain	.18
Newark, O.	.19	Dayton	.21
Detroit	.20	Saginaw	.20
Bay City	.18	Milwaukee	.18
Waterloo	.17	Kansas City, Mo.	.17
Haverhill	.30	New London	.30
Poughkeepsie	.24	Albany	.27
Rochester	.21	Buffalo	.22

The Department of Commerce has issued the following report of the status of brick production, sales and stocks on hand for the months of July and August, and also comparative figures for August, 1922:

	1922	1923
	August	July August
Face brick:		
Production	M 25,756	25,494 26,786
Stocks, in sheds and kilns.....do	51,080	67,787 60,197
Unfilled orders	do 41,781	51,826 46,252
Shipments	do 26,361	23,767 24,334
Silica brick:		
Production	M 9,666	14,499 12,397
Shipments	do 11,687	14,581 12,260
Stocks	do 35,743	41,450 41,586
Clay fire brick:		
Production	do 51,828	60,085 62,209
Shipments	do 49,075	57,569 59,456
Stocks	do 162,876	166,493 169,325
New orders	do 52,300	47,659 50,648
Unfilled orders	do 74,399	84,308 75,500

The largest brick contract recently awarded here is for the brick used in the building of the fine new Ambassador Theater, which has been erected on the site of the Knickerbocker Theater, which collapsed over a year ago, causing the loss of 119 lives. The big contract was secured by the Hudson Cement & Supply Co., whose plant is located at Langdon, adjoining the eastern line of the District of Columbia.

ALTHOMAR.

A BONNOT BULLETIN.

BULLETIN D R of the Bonnot Co., Canton, Ohio, is a new one, illustrating and describing their dry pans, wet pans, Canton represses, crushers, feeders, elevators and screens. Also there are listed dryer cars, turn tables and an outline sketch of a complete clayworking plant.

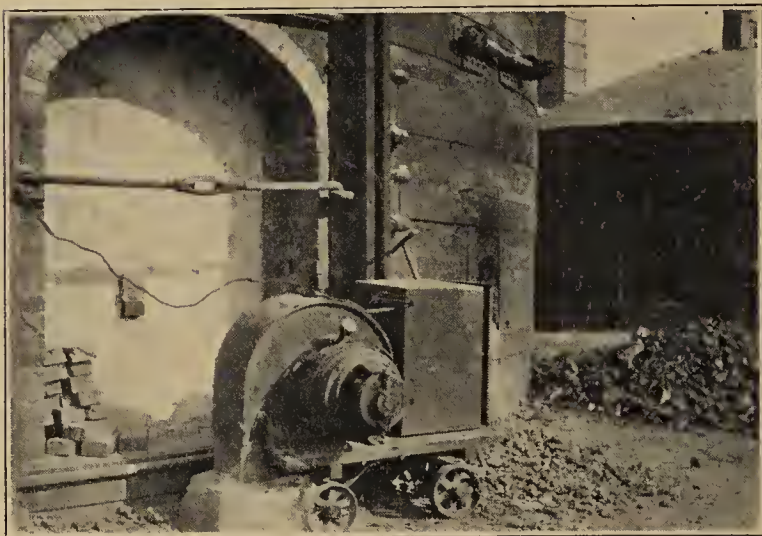
CLAY KINKS.

The First of a Series of Notes on Unusual Plant Equipment and Labor-Saving Processes Which Have Come Under the Observation of a Veteran Clayworker.

IN THE PRESENT state of development of the clay trades, active and interested minds are constantly striking on new ways of getting at the many mechanical problems in processing which present themselves in the course of the day's work.

These improvements run the entire gamut of application from clay deposit to loaded finished product, and though at times they exhibit a certain amount of engineering crudity and doubtful facility of application to all similar problems of manufacture, they at least possess the merit of proven utility at the point of their inception and use and for this reason are worthy of consideration by the wide-awake manufacturer looking for betterment.

In the course of this series of "kinks" which have come under the writer's observation in his visits to some hundreds



Individual Forced Draft Kiln Fan at the Plant of the Danville (Ill.) Brick Co.

of plants throughout the country, only those which have passed the acid test of proven utility will be chronicled, and those that bear the stamp of individual thought and initiative will be favored.

There will be no given or set order in which these stunts will appear in this or subsequent contributions to these columns, the author preferring to hold himself free and unrestricted in the presentation of a diversified collection of interesting bits of processing practice which have at widely scattered times and places made their imprint on his memory.

This arrangement, we feel, will find favor with the great mass of readers of *The Clay-Worker*, and the scope and unexpected variety of the subjects treated should lend a sustaining interest from month to month in order that nothing may be missed which might be of interest and intrinsic value in one's own particular case.

In the event of finding something in this mass of interesting topics which might adapt itself nicely into the reader's business, from the wholesome feeling of fraternity and brotherhood encountered throughout the field, we have no doubt any additional information and data desired will be cheerfully furnished.

Individual Forced-Draft Fan for Kilns.

In many yards throughout the country, the manufacturer in his desire to adopt the well-known and proven forced-draft method of kiln firing, is confronted by the engineering

difficulties involved in laying out a suitable underground unit system of air ducts through a kiln yard already cluttered with stack flues and waste heat dryer tunnels.

Different methods have been evolved to circumvent this difficulty, notably the overhead unit metallic pipe system and the individual fan with either overhead or underground piping.

The writer prefers the latter of the three as offering certain advantages not to be found in the other types. A very efficient installation of this type was recently viewed at the plant of the Danville (Ill.) Brick Co., Mr. Harvey C. Adams, president, and Mr. Jos. Neusel, manager, manufacturers of high-grade wire-cut shale face brick in various textures.

The fans, as will be seen in the accompanying photograph, are of the vertical discharge blower type, direct connected to a 2½-h. p. variable speed D. C. motor, with rheostat controller of varying speeds. The above mechanism mounted permanently on a small four wheel truck for portability in moving about from kiln to kiln as the requirements demand.

At either doorway of the kiln there is a ground manhole of substantially the size and pattern of the discharge nozzle of the fan. Into this manhole the fan is meshed and sealed with clay. The electric connection is plugged into the fixed feed system near the top of doorway, and everything is ready for starting the motor by the rheostat starter and controller, likewise mounted on the truck. Due to the variable motor speed, no dampers are required in this system as any desired air pressure can be instantly attained by the rheostat control.

This plant operating thirty-foot round down-draft kilns



Ventilating Kiln Fan, Used by the Danville Brick Co.

with eight furnaces each, employs a ten-inch sewer pipe underground air duct encircling the outer edge of the foundation wall of the kiln, with four-inch auxiliary ducts of iron pipe connecting with the air chambers underneath the flat perforated grates. Convexed cast iron doors swung by cables from the coping line of the kiln wall completes the arrangement, and marks about as economical an installation both in operation and upkeep as we have ever seen.

According to the users the system has proven to be very economical, both from the operating and maintenance standpoint, and lends itself easily to a wide latitude of operation for the production of a diversified line of red burned and flashed products and the portable feature of the fan units necessitates simply a number of such units sufficient to handle the total number of kilns under fire at any one time.

We are disposed also to grant certain other advantages

in the way of power economy due to proximity of fan to kiln, with its certain saving in duct friction, freedom from loss by pipe and valve leakage, and perfect individual control of each burning kiln unit.

Kiln Ventilation and Cooling Fan.

As long as clay plants are built we presume the practice of providing short kiln capacities will be persisted in. Even in those rare cases where an adequate kiln capacity is provided at the start of operations, the perfectly natural tendency of crowding the machine output to higher and still higher levels soon overreaches the burning and cooling limit of the kilns.

To bolster up this deficiency, and granting that a quick rotation of kilns makes for certain fuel economy and uniformity and excellence of burn, many clayworkers have discovered a friend in the ventilating fan for quick cooling of kilns and comfort for their workmen in the drawing and setting of their product.

A very good installation of this type was also seen at the plant of the Danville Brick Company, already mentioned. The fan, as shown in the accompanying illustration, is of



Novel Coal Handling and Storage System at the Danville Brick Company's Plant.

the disc type 36 inches in diameter, direct connected with a $\frac{1}{2}$ -h. p. D. C. motor and rotates at 600 R. P. M. The same electrical connection that serves their forced-draft fan is again utilized.

The fan may be mounted permanently on wheeled truck, or as in this case a sled, for portability from kiln to kiln. Where the kilns have been cooled to the point where their continuance in the waste heat drying cycle creates a disparity in dryer efficiency, the waste heat connections are removed and these ventilating fans are started.

Besides affording a certain amount of comfort to the wheelers and setters, this yard has been able to speed up the rotation of kilns to an average of about thirteen days, these fans playing an important part in attaining such excellent results. The size and capacity of fans used on this yard impress one as pretty close to ideal for the purpose intended.

Mechanical Coal Handling and Storage.

The mechanical unloading of coal from railroad cars and a satisfactory and adequate storage of this fuel to meet the exigencies of railway delivery and clay plant practice supplies a facility and economy long recognized as one of the most necessary of plant needs. That system which embodies reasonable installation cost, low maintenance expense, economy of operation and adequate capacity would suggest itself ideal for the purpose.

Such a system was encountered at the plant of the Danville Brick Company. The railroad coal cars of the central dump and hopper type are spotted on an inclined track and dumped onto an oscillating pan set beneath and at right angles to the track. This pan feeder discharges onto a double chain inclined bucket elevator reaching from the dump pit to the top of the double brick storage bins, as shown by the accompanying photograph.

The principal feature of note with this installation is that of the double brick bin, very appropriate for a clay plant, we should say, as typifying the versatility and facility of brick construction in one of many uses about manufacturing plants, and affording one of the most permanent and maintenance-free outfits that engineering practice has yet devised.

These circular brick walls, we were informed, are laid up with good cement mortar, of Number 2 shale paving brick and are free of all reinforcement, excepting a Number 9 wire every fifth course and one band as a precaution due to unsecure footing.

The elevator is arranged at the top so that the delivery stream can be easily baffled and diverted into either bin at will. The bins are of the flat bottom type, the repose line of the coal forming its own gravity slideway to the discharge opening in the bottom.

A suitable horizontally sliding discharging gate completes the outfit. These bins have a holding capacity of about 200 tons and in times of stress or threatened coal shortage this quantity can be increased approximately 400 tons, by simply overflowing the bins and discharging onto the ground below for ground storage.

The unloading capacity of this outfit is about 50 tons per hour with the attention of one man and power of one 10-h. p. motor.

KLINKER.

POTTERY ADOPTS BONUS SYSTEM.

THE THOMAS MADDOCK'S SONS CO., Trenton, N. J., manufacturer of sanitary ware, has adopted a bonus system for casters and pressers at the plant, voluntarily arranging the plan over and above the piece work schedule now operative. The bonus will be paid monthly, based on the weekly wages during such period. It will be given only to those in the employ of the company at the time that it is paid. The bonus is based on the amount of charge-back loss of the individual worker: ware that is poorly finished will be charged against the bonus, in order to encourage greater care and efficiency in daily operations. Casters and pressers who have no loss of ware during the month will receive a 10 per cent bonus for that month; those with a loss of less than 2 per cent will receive a bonus of 6 per cent of their wages; those with loss of 2 per cent and over, but less than 4 per cent, will be credited with a bonus of 4 per cent; those with a loss of 4 per cent and over, but less than 5 per cent, will receive a bonus of 2 per cent of their wages; all others who have a charge-back loss of 5 per cent and above, will not receive any bonus. Each month will be considered individually.

The result of the first month of operation shows the following:

CASTERS: 10 per cent received a bonus of 10 per cent; 47 per cent received a 6 per cent bonus; 34 per cent received a 4 per cent bonus; $4\frac{1}{2}$ per cent received a 2 per cent bonus; and $4\frac{1}{2}$ per cent received no bonus.

PRESSERS: $22\frac{1}{2}$ per cent received a bonus of 10 per cent; 33 per cent received a bonus of 6 per cent; 11 per cent received a bonus of 4 per cent; 11 per cent received a bonus of 2 per cent; and $22\frac{1}{2}$ per cent received no bonus.

As a word of advice to the men, the company says: "You can easily figure the best way to get the most out of the bonus plan—first, be careful; second, work every day; third, get the bad ones in the shop before they get you in the biscuit."

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Nine. THE UNEARNED BURDEN.

THE PREVIOUS article discussed the various items of overhead or burden as they exist, also the advisability of charging them off as rapidly as they occur. Now it is necessary to consider the means by which these charges can be arrived at so that they may be applied and used intelligently.

Indirect Labor.

The collection of indirect labor in the general pay roll is effected by the distribution of wages on the pay roll distribution sheet. Examination of that sheet will show that it is possible to determine weekly the expense of office salaries, the indirect or non-productive labor, and the direct labor.

Now, it oftens happens that a man is regularly employed partly on productive and partly on non-productive labor. For example, a helper may set bricks for a kiln part of the time, and he may clean machines or do pick-up jobs the rest. While he is working on productive labor his time must be charged directly to those operations; when he is employed on a non-productive job, his time must be charged to indirect labor as indicated on the pay roll sheet.

The indirect labor account is a source of great waste in shop cost since it is possible to throw into this account all labor costs that are not directly chargeable to the job. Simply to examine the lump sum makes it very difficult to decide how much of it was absolutely necessary and how much could be eliminated.

This difficulty may be overcome by making as many subdivisions of the indirect labor expense account as possible. Men who are regularly employed as drivers, repair men, helpers, etc., should have their time collected separately. The idle time that results from lack of immediate work should also be kept separately because by careful planning this item of expense can be eliminated almost entirely.

Repairs.

In order to reflect the true cost of repairs in the overhead it is necessary to distribute repair charges with great care. Repairs may be made once for the whole year or for two or three years. In this case, it would seem inadvisable to use the high figures furnished by the lump expenditures as the regular repair charge. It is therefore necessary to consult the records as far back as they are available and to determine the normal charge for repairs in this plant.

If the work is done by the plant's own men, then time, material, and burden must be charged to the repair job. It is a common practice among some claymen to charge only material in a case of this sort. But if this practice is followed, insufficient charges for repairs will be made and other accounts, such as the indirect labor and the supplies, will be unnecessarily swelled and will make the task of reducing the overhead a very difficult one. It is only by isolating and localizing the expenses as much as possible that a material reduction in overhead can be brought about.

Great care should be exercised also so as not to confuse repair charges with improvements that are likely to extend the life of the machines, kilns and other equipment and in

that case the cost of the improvement should come out of the depreciation reserve as indicated in the last article, while repair charges should be paid off from the burden earnings. It is true that this distinction—whether to charge repairs to improvements or to the expense of keeping the machine in running condition—is very difficult to make. It is a matter for the individual operator to decide according to his best judgment as he possesses all the facts.

Supplies.

In the articles on materials, it was pointed out that there were some materials absolutely necessary to production, but that it was impossible to distribute the cost of these materials to individual orders. The reason for this difficulty is that these materials are used in such small quantities that it is impossible to determine with even a fair degree of accuracy how much is chargeable to each order.

It is therefore necessary to make a burden charge for the supply materials that are used in production but cannot be charged directly to it. By making sure that the overhead is properly applied and that each order consequently bears its full share of the expense, the indirect material may be safely costed in this way.

In addition to the indirect material there are also certain supplies which are used in connection with the plant, such as waste and oil. These must also be charged to the supplies account.

Heat, Light and Power.

The cost of the gasoline and of maintaining this equipment can be met by charging these expenses to the heat, light, and power account. Of course, a careful distribution would have to be made between the gasoline that is used for driving the stationary engine and the gasoline used for the motor truck.

Where power is purchased in the form of electric current it is easy to distribute, as all that is necessary to obtain the monthly charge is to take the yearly cost of electric current and divide it by twelve. A division should be made between the current that is used for lighting purposes and the current that is used for driving machinery.

Coal and gas used for fuel are also included in this group. It is a sizeable item, considering the fuel used in burning ware. Wherever steam is used for heating, its cost must be charged to this account. If the plant is sufficiently large, the division should be made between the fuel cost for the office and the fuel cost for the plant on the basis of the square foot area occupied. If the plant is divided into several sections or departments, the same distribution should be made.

In the last article we discussed the matter of fixed charges which are often neglected. Of the rest, insurance on buildings and equipment, and taxes, are most generally recognized in the cost. It must be borne in mind, however, that income taxes cannot be charged to cost. The fact that the firm has or has not made a profit, does not really affect the cost of the product.

Taxes.

The personal property taxes must be charged. These are based on the valuation of the plant and land and vary with the community. This tax should be distributed to the cost

on a monthly basis in proportion to the value of the buildings or the land. The office should also bear its share of expense on the basis of the area occupied.

It is of the utmost importance to remember that there are fixed charges on the storerooms as well as the real estate, buildings and equipment. The rent of this storage space is a part of the cost of carrying these supplies. Where the plant is small this question assumes great importance. Physical limitations largely determine the quantity of stock that can be carried on hand at any time, even though the plant owner is willing to invest considerable money in his stock.

The supplies on hand should be insured. They are usually subject to taxation. They tie up capital and therefore the interest on this investment must be considered as well as the taxes and insurance. It is well for the clayworker to have a definite policy in regard to the quantity of supplies that he wishes to carry at any one time or during the season.

Rent.

If a clayman leases the land the rent chargeable to the plant can be determined by apportioning the total rent and additional charges for heat and light in proportion to the area occupied. However, when he owns the land and equipment himself, he must make several different charges to make up the total items corresponding to rent.

For example, suppose a clayman owns a piece of land worth \$25,000, on which he has erected a kiln worth approximately \$15,000. He has already invested \$40,000 which should bring him a return of at least \$2,400 in order that he may not suffer a loss. In addition he would have to pay a personal property tax of approximately \$400. The annual depreciation on the equipment would be about \$750. The repairs and incidental expenses would probably average about \$600 per year. This would make a total of \$4,150 as an offset to the rent he might have to pay annually for the lease of the plant.

The Unabsorbed Burden.

There is a tendency among clayworkers, and, for that matter, among business men of any other industry, to try at all times to make the price represent at least the cost of production. This would be a splendid thing if prices were always the same. But even before the war it was an established fact that prices were more unstable in the United States than in any other country in the world.

The theory is that price should cover the cost of production. Prices here were never steady enough to warrant a practical application of this theory. They were either quite high or quite low, due entirely to the current market.

Consequently, when general business conditions are such that it is impossible to earn for the period of a month all of the expenses incurred, most manufacturers try to meet the situation by adding the unearned expenses to prices of the following month and in that way making it all the more difficult to sell.

For example, a man may find that his sales for a month are \$18,000, and his expenses for the same month are \$20,000. It is natural for him to try to add the unearned \$2,000 to the price so as to make it up.

Not only is this step unwise from a business point of view, but it is also unscientific. It is absolutely necessary that a distinction be made in the records between the earned and the unearned burden. Unless this is done it is impossible to determine the efficiency of plant operation.

In normal times, if the burden is unusually high, the plant is badly managed. Money is being wasted on unnecessary expenditures. In time of business depression if the overhead is high it may seem that part of this is due to poor earnings, and part to poor management. It is obvious that it is impossible to make the distinction between low earnings and

poor management unless the unearned burden is separated from the current cost of production. If the unearned burden is separated, an index to the plant efficiency is obtained.

For example, we will assume that 75 per cent overhead on direct labor is normal for a manufacturer doing approximately \$75,000 worth of business per annum. Let us assume further that in another plant burden is 110 per cent of direct labor during a time when business is comparatively poor. If this latter figure is permitted to stand as constituting the true overhead, it will be impossible to determine to what extent the management is at fault for the inefficiency of the shop.

If, however, it is determined that the normal overhead for this plant is about 90 per cent, it can easily be seen that 20 per cent is due to the lack of sales and that 15 percent (the difference between 75 per cent normal and 90 per cent, the overhead for this plant is due to the inefficiency of the management. Furthermore, this distinction between the unearned burden and the normal amount of burden furnishes an index to external business conditions. If the plant is running at normal efficiency and is not able to earn all of the indirect expenses as well as the prime cost, it may be taken as an indication that general business conditions are below normal.

The Monthly Budget.

It is established, then, that burden may not be charged against the cost if the plant is not running full time because this practice distorts the cost so as to make them seem low when production is high, and high when production is low.

For example, assuming that the plant burden runs 75 per cent of the direct labor cost, it may be found upon investigation that the labor cost for one month was \$1,200. At the predetermined rate of 75 per cent of direct labor the burden earned this month is \$900. But the statement shows that the actual burden for the month was \$1,250, a difference of \$350, which constitutes the unearned burden. This \$350 cannot be added to the cost since only as much burden can be charged to the cost as there is production for it.

The above indicates the reason why some budget methods are insufficient. The practice of taking the burden that is not earned in one month and adding it to the remaining months of the year has a tendency to accumulate burden charges against the plant at a time when it is least able to pay them.

The method referred to above is something like this: It is determined at the beginning of the year that the normal burden for the plant is \$15,000 per annum. This \$15,000 divided by 12 gives us \$1,250, which constitutes the monthly burden charge for this plant. This \$1,250 is approximately 75 per cent of the normal direct labor cost. Now, in January this plant earned only \$900 in burden, which leaves a deficit of \$350 for the month. According to this method the \$350 would be added to the burden to be earned for the rest of the year. That is, instead of \$13,750 there is \$14,100 remaining to be earned during the next eleven months. This \$14,100 is divided by 11 to determine the amount of burden that will now have to be earned during each of the remaining eleven months. The monthly plant burden is now \$1,291, or 77 per cent of the direct labor cost.

In February the plant earned only \$800, which leaves a deficit in the plant burden of \$450, for this month and \$350 for January. This leaves a total of \$13,300 to be earned in the remaining ten months. This \$13,300 divided by 10 leaves a monthly burden charge of \$1,330. This is 80 per cent of the direct labor cost for the month ($1330 \div 166 \frac{2}{3}$). Of course this does not mean the overhead rate would be increased indefinitely. As the earnings would increase the rate would drop.

The Objections to This Method.

However, the chief objection of this method is that it increases the rate when business conditions warrant such
(Continued on page 390)

Written for THE CLAY-WORKER.

THE CHICAGO SITUATION.

CHICAGO'S RECORD of construction permits for September just closed exceeds in point of estimated costs of the contemplated buildings and improvements the building record of August of this year and more than doubled that for September, 1922. There is every indication that the record for the present month will exceed that for October, 1922, substantially not only in construction costs, but also in number of projects for which permits are sought from the building commissioner's office.

The number of permits taken out last month totalled 1,209 as against 924 for September a year ago, although falling somewhat behind the mark of 1,440 set in August of this year. The estimated costs, however, showed \$27,874,700 for this September as against \$20,134,150 for August, 1923, and as compared with only \$12,263,100 for September of last year. August retained supremacy in number of apartments and individual dwellings, but September, 1923, led in number of industrial projects, a few notable ones in this group being responsible for the remarkable showing in contemplated expenditure.

The latest big announcement in coming downtown construction is that concerning a new Masonic Temple, which will outdo the famous old structure (now called the "Capitol Building") which for many years bore that name, for the new temple will have a tower rising 300 feet above the sidewalk. It will cost in the neighborhood of \$5,000,000. In the construction of this great building Chicago will lose an old Randolph Street landmark—the former Iroquois Theater, the scene of the terrible holocaust which brought tragedy or suffering into hundreds of Chicago homes in December, 1903. The old theater, remodeled, has been known for years as the Colonial. Wrecking of it will be begun next May. In addition to this site the Masonic corporation has secured by lease from John R. Thompson the adjoining property, which will give to the new temple a frontage of 140 feet on Randolph Street. The old theater, however, will not completely vanish, but will give place to a much larger one having more than 3,000 seats, making it one of the largest playhouses in Chicago. The eighth floor and the thirteen above it will extend over the ceiling of the theater's auditorium and will be devoted to lodge halls, with a tremendous drill hall on the top floor. All told there will be about seventeen lodge halls, sufficient to accommodate more than 100 lodges, the total number of Chicago lodges now meeting in the loop.

The Devonshire, a new ten-story apartment hotel at Sherwin Avenue and Sheridan Road, boasting 360 rooms will afford another opportunity for display of the effectiveness of brick, terra cotta and tilings. Its most striking architectural feature will be a circular dining room with a dome, and a fountain in the center.

The new orthodox synagogue, to be built at the southwest corner of Springfield Avenue and West Congress Street, for the Congregation Aagrod Wilno, will be of "tapestry" brick with stone trim and copper domes. It will cost about \$150,000, seat 1,500 in the main auditorium, have four class rooms, prayer room and dining room in the basement. Work will start soon after the first of next year.

Work has started on the \$500,000 addition to the Lakeside Hospital, at the southwest corner of Rhodes Avenue and East Thirty-fourth Street. This is the first unit of a project which contemplates the eventual wrecking of the entire present plant, the completed group to constitute one of the finest hospitals in the country. The new addition will be five stories in height and completely fireproof. It will present an attractive exterior of face brick trimmed with Bedford stone.

Another important north side hotel project is the new Flanders to be erected at the southeast corner of Broadway

and Buena Avenue. It will cost about \$2,200,000 and will have 349 rooms.

The signing of a ninety-nine-year lease for the property at the northeast corner of West Randolph and North La Salle Streets, promises the early erection of a lofty downtown hostelry to cost about \$1,500,000. It is suggested that it may be known as the Hotel Lincoln. E. L. Wenzel, head of the Hotel Planters Company and owner of the Washington Hotel, 167 West Washington Street, is back of the project. Two alternative plans are said to have been worked out by the architect, Alfred S. Alschuler. Under one, the Lincoln will climb as high as the new zoning laws allow, probably to twenty-six stories which will allow about 400 rooms. The other plan would call for twenty-one stories and approximately 350 rooms. The exterior of the new hotel will be of red tapestry brick with Bedford stone trim for the first three or four stories.

Meanwhile, flat building is not being neglected. In addition to many moderate and small projects, work will start within a few weeks on a fifty apartment building on the south side of Park Ave., half a block east of Homan Ave., which will cost when finished in the neighborhood of \$350,000. Work was scheduled to start about the middle of this month on an apartment project in Hyde Park at 5020-34 Woodlawn Avenue, of brick construction. There will be two buildings, one a court structure and the other "L" shaped. The court building will have seventy-four apartments. It will have a lobby forty feet by twenty-one, into which will open entrance ways leading to the various apartments. The lobby also will have thirty-one apartments. There will be a playroom twenty-two by fifty feet. The cost of the entire project is estimated at about \$700,000. On the far west side at Lawndale and Arthington Avenues, construction is to be started shortly of a forty-two apartment building of brick and costing about \$250,000.

SCRIP.

BLAME FOR THE BRICKLAYER SHORTAGE.

THE HIGH WAGE scale of bricklayers and the shortage of competent workmen which under the law of supply and demand has contributed to bring about these high wages, has been the subject of much newspaper comment and with its fair share of buck passing as to who should shoulder the blame. Some lay the blame on bricklayers' unions for limiting or restricting the number of apprentices. Some take up the cudgels for the union and lay the blame on employing contractors because they never use the full quota of apprentices suggested, and the blame is passed along from one to another till the issue becomes too muddled for clear understanding.

As a matter of fact it is one of those conditions for which no one is to blame in toto though many may have been negligent. It is natural for skilled bricklayers to want most of the brick work for themselves, and to not hanker after the training of enough other skilled workmen to make competition sharp for whatever work is doing. So it is not a question of blame there, but of natural self-protection. The clay-working industry has realized right along the need for more bricklayers, and has repeatedly through ten or fifteen years urged this idea. But perhaps individual operators and groups of clay manufacturers have not given as much time and effort specifically to this work as they should. It is not here a case of doing something they should not have done, but of neglecting to do more practical work in the way of helping to get new bricklayers properly trained.

The contractor is interested and may have shirked some of his indirect obligations, but on the whole he has very little to do with this phase of the matter. Usually the general contractor sublets his brick contracts to experienced bricklayers who employ their own help. So it is a question here of probably the sub-contractor who is himself a bricklayer as one who has limited the use of apprentices.

After all, however, nothing much is gained in seeking for a place to lay blame. The call of the day is for the proper systematic training of a sufficient number of young men to supply the future needs of the masonry work of the country. Incidentally, it may be remarked that the present high wages will serve more than anything else to encourage youngsters to take up the calling and will help solve this problem.



A Six-Story Building in Chicago Which Was Moved Back 100 Feet so That a Boulevard Might Be Widened. Eight Miles of Railroad Track Were Used, and Not Even a Brick Was Cracked in the Moving. The Lower Photo Shows the Building in Its New Position. (International Photo.)



Cincinnati's River Front and Sky Line.

OFFICIAL ANNOUNCEMENT



THIRTY-EIGHTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION TO BE HELD AT HOTEL GIBSON, CINCINNATI, OHIO, JANUARY 28 TO FEBRUARY 2, 1924.

BACK HOME TO CINCINNATI: Our birthplace is the preference of a large majority of our members as evidenced by the recent letter ballot and for that reason and others, good and sufficient, it has been decided to hold the Thirty-eighth Annual convention of the National Brick Manufacturers' Association in Cincinnati, Ohio, the week beginning Monday, January 28, 1924. The Association was organized in that city in September, 1886, and we have met there but once since then, our eighteenth annual convention in February, 1904. Twenty years is a long span, and surely it is time we were again meeting in the city of our birth. So think the good citizens of Cincinnati who are interested in our Association, including the Honorable George P. Carrel, Mayor of Cincinnati, from whom we have the following cordial letter of invitation:

CITY OF CINCINNATI

Office of the Mayor

September 18, 1923.

To the Officers and Members of

The National Brick Manufacturers' Association.

Gentlemen:—

Permit me on behalf of the citizens and municipal authorities of Cincinnati to join the Cincinnati Chamber of Commerce in extending you a most cordial invitation to hold your next meeting in our city.

We pledge ourselves to make good all the offers of hospitality and courtesy which have been spoken for our city by the Cincinnati Chamber of Commerce, which represents our commercial and social interests.

We will open our gates to you and will spare no endeavor to make your stay with us both pleasant and profitable, if you decide to act favorably on this invitation.

Very truly yours,

GEORGE P. CARREL,
Mayor of Cincinnati.

The Cincinnati Chamber of Commerce also extends a hearty invitation and included in that body is the Cincinnati Brick Club, composed of the brick dealers of the city. The

leading manufacturers of brick and tile of that vicinity are also members of the Chamber, each and all of whom will extend the glad hand to our members convention week, and welcome us back home in Cincinnati, as is indicated by the following pleasing invitation from the Chamber of Commerce.

CINCINNATI CHAMBER OF COMMERCE

Executive Office

September 18, 1923.

To the Officers and Members of

The National Brick Manufacturers' Association.

Gentlemen:—

On behalf of the Cincinnati Chamber of Commerce, one of the greatest commercial bodies of the United States, representing our combined business interests, the Cincinnati Hotel



Honorable George P. Carrel, Mayor of Cincinnati.

Association, our municipal authorities and our other civic and commercial organizations and our people generally, we urge you to hold your next convention in the Queen City.

Cincinnati is a convention city of national—even international reputation. Our railroad facilities, splendid hotels, charming beauty spots, many amusements and famous hospitality, combine to guarantee you a successful, pleasant and profitable convention here.

Very sincerely,

W. C. CULKINS,
Executive Vice-President.

The week of January 28th has been selected for our convention to enable the members who desire to do so to join the party booked to leave Chicago, Saturday of that week, February 2, for the annual convention of the Common Brick Manufacturers' Association at Los Angeles a week later. This will accommodate the members who desire to attend both

conventions. Those attending the N. B. M. A. meeting at Cincinnati can if they wish leave Cincinnati Friday evening, spend Saturday in Chicago, and then join the happy throng on their way to the Pacific Coast. Those who do so will find the N. B. M. A. meeting at Cincinnati an inspiration for the continued consideration and discussion of the important problems of the industry.

Hotel Headquarters.

Hotel Gibson will be headquarters at Cincinnati, and be it said it is a splendid brick structure elegantly equipped for convention purposes. It has 900 guest rooms, each with a bath, either shower, tub, or combination tub and shower. The rates on the European plan range \$2.50 up per day for single rooms and from \$5.00 up per day for double rooms. Its



The New Gibson Hotel, Cincinnati, Ohio.

splendid facilities insure every comfort and convenience possible for the entertainment of our members. No hotel in the nation offers better accommodations for our purpose. The convention hall is on the floor above the mezzanine floor. The latter looks down on the lobby. The floor above the convention hall, the first guest floor, will be reserved for the "trade missionaries," the machinery and supply dealers, and will afford them quarters unexcelled in any hotel in the land. Reservations on that floor will be made through Secretary

Randall. Those desiring rooms for display or headquarters purposes will be accommodated at rates commensurate with the accommodations provided. The able manager, W. E. Hawk, promises to use every effort to insure satisfactory service to our entire membership.

The Hotel Gibson is unsurpassed in equipment. It boasts of one of the largest and most beautiful dining halls extant, christened the Florentine room. It is a marvel of elegance and beauty. The lounge and waiting rooms on the main floor are luxurious and afford a most comfortable place for friendly chats and social gatherings. The gentleman's smoking room is particularly inviting. There need be no dull moments convention week for those who enjoy meeting with old friends or chatting with new ones. It will be a rare opportunity for the discussion of the present day problems of the craft, with the captains of industry who will gather there for that purpose. The Fountain restaurant in the basement of the Gibson Hotel is a marvel of perfection. The busy man or woman whose time is limited will find here quick service and the best food the market affords at reasonable prices. Of course there are private dining rooms for the convenience of special parties or groups desiring a measure of privacy for conferences, etc. All in all, the N. B. M. A. has never met under more favorable conditions than the Hotel Gibson offers.

The time, the place, and facilities are well chosen. Every brick and tile manufacturer in the land is earnestly invited to come and enjoy a week of business conferences and social pleasures, a rare combination.

Twenty years ago Cincinnati was a city of 300,000 people. Today its population is well over 500,000 and its attractions and places of amusement are innumerable. It affords a fine opportunity to study art in architecture, as many of its great buildings are models of fine brick work. The Glad Hand Committee will be more than pleased to guide the visitors to points of interest in and about the city.

Reduced Railroad Rates.

REDUCED RAILROAD RATES have been applied for and it is anticipated a low round trip rate will be afforded members and those who accompany them to the convention.

Those desiring information on any phase of the brick industry are requested to advise with the Secretary, Theodore A. Randall, Indianapolis, who will endeavor to include same on the program which will be given in full subsequently. The requisite of membership in the National Association is an interest in the craft and a fee of \$10.00 per annum.

THE EXECUTIVE COMMITTEE,

RUFUS C. BURTON, President.

THEODORE A. RANDALL, Secretary.



Cincinnati General Hospital, Twenty-Four Buildings, Covering Twenty-Six Acres, All Brick Construction.

DISPLAYING AND SELLING CLAY PRODUCTS.

MAKING PRODUCTS HELP sell themselves by proper display is not only the secret of growth among the ten-cent and variety stores, but it is what makes show windows famous everywhere. And it is what leads brick manufacturers and dealers into setting up special wall panels to demonstrate the artistic beauty of their products. We have here a wonderful field of opportunities and future sales possibilities in clay products that we are just beginning to break into and cultivate in spots. We are beginning to recognize and take advantage of opportunities furnished by state and county fairs, building shows and other expositions. And the following up of these opportunities is in line with arguments that have been advanced through the columns of *The Clay-Worker* for several years now. A plea has gone forth in season every year that the producers of brick and hollow building tile, sewer pipe, flue linings, drain tile, and so on, take advantage of the opportunities to display their products through exhibits at fairs.

Some of the arguments seem to be bearing fruit, too, and the returns show some good results in exhibit displays. A fair example is that furnished by the Kentucky State Fair at Louisville this fall where several manufacturers of clay products made some interesting displays.

Among the inside panel displays one group of particular



Booth of the Louisville Cement Company at the Kentucky State Fair.

interest was made up of products of the Southern Brick and Tile Co., and the Coral Ridge Clay Products Co., of Louisville, their displays joining in a neighborly manner, which made the show more impressive as well as furnished evidence of friendly co-operation. And, fortunately, near enough to be a part of the same group there was a booth of the Louisville Cement Co., featuring a mortar material under the trade name of "Brixment," which used brick work in outlining its general exhibit to show the artistic effect obtained from the use of their mortar material. The feature of this latter exhibit was in its suggestion of porch approaches and outside bordering architecture of the home. It is very timely, too, because many porches today even on homes built of lumber have walls, copings and piers of masonry and there is a noticeable trend toward getting arches, curves and various departures from plain wall construction in these. So the cement concern really furnished a good and suggestive display in brick.

The Southern Brick & Tile Co., in addition to typical showings in panels and loose samples of brick and of drain tile, put in three wall sections, showing a standard brick wall, one the ideal hollow wall, and one of frame wall with face brick veneer.

On the Coral Ridge Clay Products side, where tile was

featured along with face brick, there was in addition to the panels and the showing of samples in brick and hollow building tile, wall sections showing how hollow tile is laid up in conjunction with face brick and also how it is set up as a partition wall. So both the exhibits were educational as to details of construction as well as showing panels of face feature effects.

The most unique and novel showing was on the outside in the open ground among silo and corn crib showings. This showing was made by the Nateco people, represented locally by the R. C. Tway Building Supply Co., of Louisville. They have some permanent silo sections and foundation sections in hollow tile, but the newest and most novel feature is in some panel sections showing a hollow tile product designed



Interesting Display Made by the Southern Brick & Tile Company.

about six feet wide, supported by piers of other hollow specifically for corn cribs, furnishing qualities of permanent construction along with ventilation and safety against rats. They have devised a tile specifically for corn cribs that makes



Coral Ridge Clay Products Company's Exhibit.

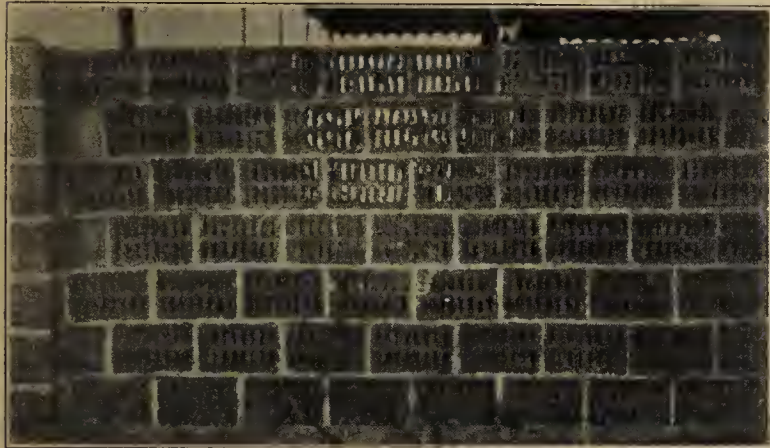
a wall approximately four inches thick laid up in panels building tile made to fit in specifically with this work. And the sample panels set up as a permanent exhibit makes an interesting feature that is so novel and unusual in comparison with other material offerings for corn cribs and other farm outbuildings as to demand attention and induce interesting inquiries.

That is the purpose of exhibiting generally, to attract attention, or start inquiries, and to awaken desire on the part of those who can use clay products. What we need is more of this, not only more of fairs and expositions, but clay products manufacturers may profit from doing more of it in

their own community and hooking up with it that old effective poster slogan "Build with Brick."

We know that a lot of effective advertising is done on billboards and by posters. These of themselves do not constitute an element of beauty on the landscape. They are often offensive in this respect though they may carry an effective message. The man with brick and hollow building tile and other clay products which enter into structural uses has an opportunity to do something here both effective and beautifying by getting out at conspicuous corners and along highways and setting up wall sections and displays that will be artistic and add to the beauty of the surroundings and at the same time help effectively in interesting folks in clay products.

And it will add to the interest and effectiveness if some-



Perforated Block for Corn Cribs Exhibited by the Natco Agent.

where around these things is put up that slogan that has been made famous in the past—"Build with Brick."

STANDARD BRICK SIZES.

IN A RECENT bulletin of the Fabricated Production Department of the Chamber of Commerce of the United States, on standardization of various products, there appears the following paragraph pertaining to face and common brick.

"Not until a survey had been made was it very generally realized the multiplicity of sizes for brick. If any commodity should be standardized dimensionally it is building brick. This was accomplished on June 21, 1923, at a conference of clay brick manufacturers, engineers, builders and other interested elements. Two sizes of face brick were retained and one for common brick. The face brick sizes are: Rough brick, $8 \times 2\frac{1}{2} \times 3\frac{3}{4}$; smooth brick, $8 \times 2\frac{1}{2} \times 3\frac{3}{8}$. For common brick the standard size is $8 \times 2\frac{1}{2} \times 3\frac{3}{4}$."

In the official printed report of the 36th annual convention of the N. B. M. A., held in 1922, on page 206, is the following tabulation of standard sizes of brick as adopted by the N. B. M. A. in 1918:

Common brick	$8 \times 2\frac{1}{2} \times 3\frac{3}{4}$ inches
Face brick	$8 \times 2\frac{1}{4} \times 3\frac{3}{4}$ inches
Paving brick	$3 \times 4 \times 8\frac{1}{2}$ inches
Roman brick	$12 \times 4 \times 1\frac{1}{2}$ inches
Norman brick	$12 \times 4 \times 2\frac{3}{8}$ inches

Having a standard is one thing and living up to a standard of sizes is something else. It seems from reports that we have had many variations from standard sizes, but the official reports show that the N. B. M. A. has not been backward or negligent in the matter of the desirability of specific standards in the brick industry. The subject of standards is one that has been discussed many times at the conventions, and there is no room for question that out of

this has come more uniforming of practices as well as the setting up of the specific standard sizes quoted herein.

What we should center our attention on today, however, is not so much who originated the idea of standards, and when and where they were developed, but on how we may further the practice of more general adherence to established standards of sizes in the brick industry. The problem is to correct departures from the standard sizes and keep practices in harmony on sizes, and eventually establish more uniform standards as to quality of both common and face brick. Those concerned with standardization work are now actively taking up the matter of quality standards as a natural next step following the setting up and general use of quantity standards or dimension standards. So let us strive for uniformity in both brick sizes and for a uniform high grade of brick quality.

INDUSTRIAL MOTION PICTURES.

There is open prediction now that we are to have a revival of interest in motion pictures as factors in the industry, not only as a means of exploiting the products to the general



Exhibit of Hollow Building Block for Silo Construction.

public, but also as new educational factors in better training for the work.

The motion picture factor suffered from too much enthusiasm early in the game. When the motion picture folks got on the job both they and the people having the pictures taken were so full of enthusiasm that there was too much length and elaboration of details. So that the final results were a bit tiresome and oppressive and led to some reaction and a let-up of interest in the motion picture as an educational publicity factor.

Now we are getting back at it in better shape. Not only are the concerns seeking short news reel features getting into the game with some good work that is gratis so far as the industry is concerned, but the industry itself is beginning to realize that there are possibilities in short reels of pictures getting at the more essential features of the industry, and now the indications are we are to have some splendid motion picture publicity. Also that we will develop out of it all a series of slow motion pictures to show the details of work both in the production of brick and hollow tile and in laying it up that will prove to be splendid factors in helping to train and educate workmen.

TRADE NOTES.

Samuel Cooper, Sr., a retired brick manufacturer of Akron, Ohio, died at his home October 10. He started in the brick business in 1882 and carried on same until five years ago.

The A. J. Rogers Company, of Boston, Mass., has been incorporated to manufacture brick by Alfred J. Rogers, Winthrop; Mildred Rogers, Winthrop, and Elizabeth F. Dolan, of Avon, Mass.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

THE RETURN OF COMPETITION.

HERE AND THERE are reports indicating a return of active competition in spots in the clayworking industry. There is not much of it yet, nor are we likely to have much of it this winter, because taking the country as a whole there seems to be a need for more brick and hollow building tile than will be produced. The fact that production has reached the competitive stage or saturation point in some spots is a reminder that some day in the course of events we will have a return to more active competition, and it is well for us to be thinking of this in advance. And a good thought to emphasize in connection with it is one voiced in the past month by a correspondent who said that though they had active competition in his territory so far there had been no price-cutting as a result, which is fortunate because it would mean the sacrificing of profits. When competition leads to the use of the price cutter and the banishment of profits it is bad business. When we can keep competition on a friendly rivalry basis it stimulates thought which leads to more resourcefulness and good progress, but when it turns to trade warfare it is a different thing. So, while enjoying good times and in the main freedom from hurtful competition at present, let us give thought to this matter of when competition may return and be prepared to meet it in a spirit of co-operation one with the other.

QUALITY STANDARDS IN TILE.

A RECENT PLEA was made in these columns to make hollow building tile good. To help preserve the standing and prestige of the industry as a whole by refraining from putting on the market tile that is not up to standard test requirements. This plea finds a supporting echo response in a recent bulletin of the Chamber of Commerce of the United States on the subject of quality standardization.

In this bulletin a plea is made for us to concern ourselves now with establishing standards of quality and maintaining them for the protection of both seller and buyer. It is pointed out that quantity standards are essential for the free interchange of commodities in commerce beyond the first-hand stage of transportation. A commendable instance of quality standardization is that of the cement industry which has pretty thoroughly standardized the quality of its product and is benefiting from it through exploitation of this fact. There is no reason why hollow building tile manufacturers may not benefit equally by setting up and maintaining positive standards as to quality. The work of setting up these standards has already made good progress. Through research and tests we are establishing some positive sizes and weights and other factors essential to meet the quality requirements in these products. The next step is to inspire

every producer with an earnest desire to live up to standards of quality as well as comply with established standards in dimension.

We are told that it has been conclusively demonstrated that quality is fundamental. Prices and sales talks lose most of their appeal if they are not backed up by quality. And the man who fails to maintain quality not only loses prestige himself, but he injures the standing of the industry as a whole.

We have made wonderful progress in quantity production through standardizing sizes and shapes, in fact, we are the leading nation in the world on progress of this kind. Now, then, let us turn to and prove that we can be leaders also in the matter of quality, and make the right start for this leadership by setting up positive standards of quality and then living up to them.

HOLLOW TILE ON THE FARM.

THE HOLLOW BUILDING TILE Association, with headquarters in the Conway Building, Chicago, has lately featured some impressive folders dealing more specifically with hollow tile for farm buildings, including almost every type of building from the farm home to chicken and hog houses and silos and corn cribs.

The folders in this case are illustrated with pictures of actual buildings that have been constructed and for which plans can be furnished. Presumably, too, the data contained in these is available to the individual members to help out in their local advertising, and it should encourage a well-organized and consistent drive for more business through developing permanent building on the farms.

It is in farm building that clay products on the whole have the biggest field of possibilities for further development, and the Hollow Building Tile Association is working along the right lines in gathering pictures and plans of farm buildings that have been erected as the basis for exploiting more building of the same kind on the part of other farmers.

HOLLOW TILE PARTITION.

AS WE DEVELOP the practice of building the walls of homes out of brick and hollow building tile there will naturally go with it interest in flooring tile and partition tile. The ideal home of the future will have its first floor made of hollow building tile for permanence and safety against fire and its partition walls made of hollow tile. This will be in keeping with practices that have already developed in office buildings and other larger structures and it points to the fact that the future should bring considerable trade development in partition tile.

There are indications, too, that the hollow building tile

industry is awake to this matter and is making preparation to sell the building public on the idea of hollow tile partition. Competition of other material is playing a little part here, too, and incidentally helping to awaken enterprise. At a recent group meeting of the hollow building tile association a motion was carried for co-operative effort between the group secretaries and the general secretary of the association on the matter of cost, weights and sales arguments as between gypsum blocks and partition tile and burned clay.

There is not only a gypsum block made for partition walls, but of late there have been some experiments with a lime sand block for the same purpose so there will be some competition to keep interest alive and enterprise stirring. There is hardly room for question but what the burned clay tile is the superior offering and the important need of the day is for more awakening to the possibilities here and more sales effort on the part of tile manufacturers toward promoting the use of partition tile.

A SIGN OF PROSPERITY.

CHARLES M. OBERLY, of Wilmington, Del., believes in signs, and so does his business associates. They have recently erected a large number of illuminated signs on the principal highways leading into Wilmington,

tile in Connecticut, removed to Milford Center, Union Township, and there manufactured horseshoe tile by hand until his death, in 1869. A Mr. Milner also operated a small tile factory at Columbus about the same time.

"At the close of the rebellion W. S. Postle, of Prairie, and S. J. Wooley, of Brown Township, Franklin County, were first to establish factories, which were run successfully.

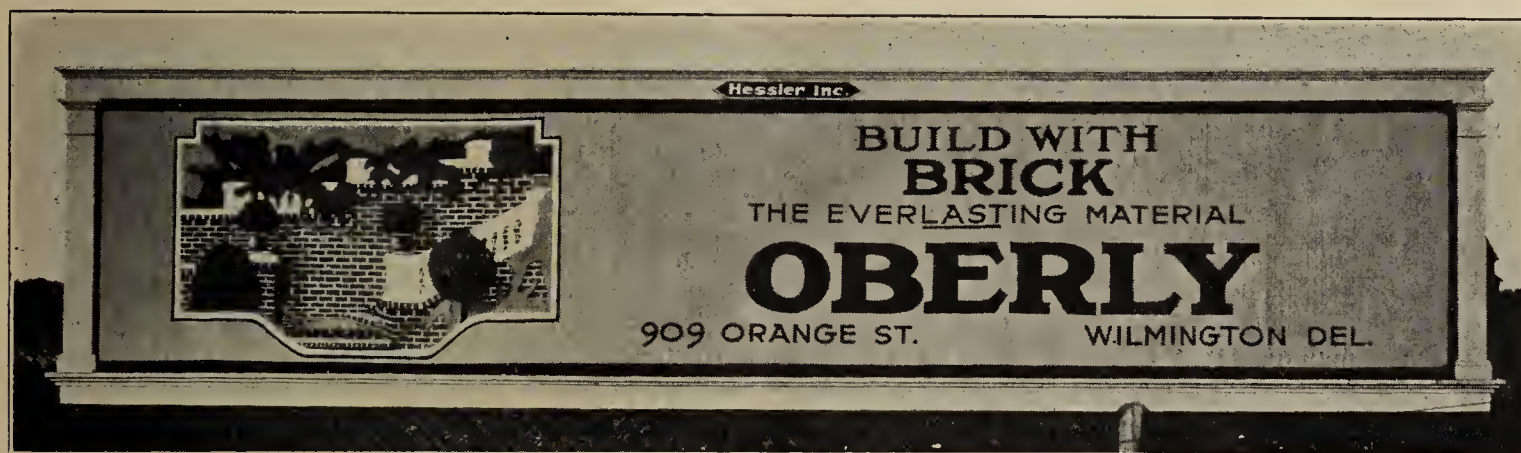
"As early as 1810, horseshoe tile were manufactured in England. It was so called because it was shaped like a horseshoe, instead of cylinder, and was laid with the opening at the bottom. For 30 years there was no improvement.

"The first improvement over the horseshoe patterns was made by adding a bottom piece, called the sole tile, to the opening in the horseshoe. These improved tile were extensively used until superseded by the cylinder pattern, which is the only kind of drain tile now manufactured.

"The only tile machines manufactured up to 1856 were made by A. La. Tourtee, of Waterloo, N. Y., and Mattice & Penfield, of Willoughby, Ohio, who also manufactured tile. These men did not meet with any great success financially, but they were the pioneers in educating the people.

"My earliest recollection of the manufacture of drain tile was when as a child, four, five and six years of age, I played with my older cousin in the drain tile and brick plant built by James W. Penfield on his farm at the center of Willoughby.

"At that time he made oval tile, that is, flat bottom tile



One of a Number of Similar Signs Erected in Wilmington, Del., by The Oberly Brick Company.

which carry The Clay-Worker slogan, "Build With Brick," in a most convincing way, as the reader may see by the accompanying photograph of one of the signs, which are made thirty-five feet long and stand twelve feet high. They are attractive in appearance and so bold that they catch the eye of every passer-by.

Mr. Oberly writes they have been very busy at the brick plant the last season and the output is already sold up to the first of January. The founder of the firm, James B. Oberly, passed over the divide May 27th, since which time the business has been conducted by his two sons, Charles and Howard, in the name of the estate. It is the intention of the boys to form a corporation for the continuance of the business.

SOME DRAIN TILE HISTORY.

THERE IS AN interesting bit of drain tile history given by L. W. Penfield in the American Clay Magazine for September.

First, he quotes from the Uhrichsville (Ohio) Evening Chronicle, the statement that horseshoe drain tile were made by hand in Ohio as early as 1832. The place being at Avon in Lorain County. Continuing from this point, he says:

"In 1867, a Mr. Canfield, who made the best horseshoe

entirely. They were run out on wooden pallets cut off and handled and transferred on rack cars to the dryers where the pallets were slipped into racks.

"I later learned that the first tile were made as horseshoe tile with open bottoms and for quite a number of years thereafter there was a call for this type of die in New York state. Some of these dies were made and sent to customers in that territory even after I became connected with the business in the early 80's.

"I believe Mr. La Tourtee was always spoken of as Mr. La Tourette of Waterloo, spelling is La Tourette instead as given in this article. Mattice and James W. Penfield were in partnership before the period of my recollection and Mattice was the inventor of what was specified in the Penfield machine as the 'double cut-off plate' for which he held a patent. James W. Penfield purchased this patent from him and later secured a patent on an improved design of the cut-off plate and involving the interlocking feature. This type of cut-off plate is still in use in all our design of plunger machines. By its use the amount of material which could be charged into the pressing tension and, in fact, all adjustments chamber at each revolution of the machine was greatly increased over that which would be charged when a single cut-off plate only was used."

BUILDING A CITY.

IT IS A trite saying that a prophet is not without honor save in his own home. We are glad to record an exception to that rule and compliment Lincoln S. Morrison, brick manufacturer and builder of Florence, S. C., on achieving decided honor among his neighbors and fellow citizens by erecting a large number of attractive brick homes which add to the city's resources, comfort and beauty. A happy combination which may well make Lincoln the envy of his fellow brickmakers throughout the land. However, he says, in his droll way, that they can each and every one follow suit and build just such homes in their respective localities and thereby increase the use of their own product and realize the profit due to worthy enterprise. A recent issue of the Florence Daily Times runs on its front page the following unique announcement. It sure is good publicity.

WHO, WHAT, WHEN, WHERE, HOW AND WHY?

WHO

do you think of when brick is mentioned?—
Lincoln S. Morrison.

WHAT

has he done in Florence to help solve the housing question?—He has constructed 25 brick houses in the last 15 months and has been instrumental in the construction of nearly 100 in the last three years.

WHEN

people were walking around in Florence without a roof over their heads, Lincoln S. Morrison formed the Morrison Investment Co., and began building brick houses for them to live in.

WHERE

a few years ago there was not a brick house in Florence within reach of the average wage earner, Mr. Morrison has built many attractive brick bungalows in various parts of the city, which have been either bought or rented at a reasonable figure.

HOW

this was done is the story of one man's faith in Florence, backed by energy and foresight.

WHY

Lincoln S. Morrison is one of the biggest assets we have is because he is BUILDING FLORENCE.

PRIDE IN A BRICK HOME.

We are indebted to our good friend John W. Sibley, Birmingham, Ala., for the following which he used in one of his speeches boosting brick.

"I own my home, and life's a pome, from outside to the center; I'm full inside of honest pride; I'm sorry for the renter. I own my shack both front and back, the kitchen and the porches; and here I sit and feel I'm IT, and smoke my five-cent torches. The house is old, the rooms are cold, the roof is often leaking, and in the night when men sleep tight I hear the front gates creaking.

"My house is cheap; no footmen keep their vigils in the hallways; no butler stern with pomp to burn here combs his auburn galways. My house is punk, the doors are shrunk,

the windows shake and rattle; and on the stairs and under chairs the cats and rats give battle. It isn't fine but it is mine; with smiles I bid you enter. I am the king while here, by Jing! I'm sorry for the renter."

WALT MASON.

Well, I quoted that, and added this, by Grace Fuller, an Alabama girl.

I own my home, and life's a dream; I too, am full of pride; my house is built of honest brick from steps to fireside. The roof sits snug, the porch is wide, the doors and windows fit; no uncouth sounds pervade the night as round the fire we sit. The house is new, the rooms are warm, the kitchen is rat-proof, the walls are dry—no dampness creeps through doors or cracks or roof. My house is FINE and it is mine; my friends find here no fault. But one thing comes to mar my joy—I'm sorry for poor Walt.

BRICK PORCHES ON FRAME HOUSES.

ONE OF THE easily noticeable features of the architecture of the year is in the great percentage of brick porches on frame houses. In some sections of the country probably 75 per cent of these have a combination of concrete basement and foundation and porch floor while mounted on the porch floor is a parapet wall of brick and piers of brick to support the porch roof. There is enough of this in some sections to give us the impression that probably more face brick are sold for porch work than are sold for face work for homes that are built.

Architecturally it is very faulty. It is probable that one reason for the brick porch is because of its permanence. Wooden columns or posts under an outside porch rot away at the bottom and must be replaced, therefore, for the sake of permanence even those who build frame homes quite commonly construct brick piers to support the porch roof instead of wooden columns, and connect these up with brick walls inclosing the porch instead of the old porch rails and banisters. This helps the brick trade some and has made all told an interesting market field for brick during the year. But it is not enough, and besides it is bad architecturally for two reasons. One is that with a brick porch there should at least be an outer veneer face of brick on the frame home all the way around. Another is that with a brick porch the foundation at least from the grade up should either be of brick or hollow building tile.

What it looks like is that the popularity of the brick porch is an opening wedge to some wonderful future possibilities for both brick and hollow building tile. First, it should open the way to selling face brick to enclose the entire home and not merely the porch. This in turn should eventually lead to walls constructed either of brick or a combination of brick and hollow tile. Meantime, surely it will be easy to demonstrate that hollow tile or combinations of hollow tile and brick will make the basement and foundation wall more in keeping with the brick porch.

One of the needs of the day is for the hollow building tile people to sell the building public on the idea of using clay tile instead of concrete work for basement even below ground. There is a splendid field here for sales work and for building a good tonnage of business on tile for basement work up to the grade line which is today mainly done in monolithic concrete calling for the use of lumber forms and the work of mixing. It should be practical to demonstrate that basement walls could be laid up with hollow tile block and furnish a more economical and satisfactory job than the usual concrete job. Then there would naturally follow the use of either hollow building tile or brick or a combination of both from the grade line up to the floor line, a place now

made conspicuous by the use of hollow concrete block. If the hollow tile people will hook up with the brick people and get busy here with sales work it will be much better all around than to be getting busy in competition with each other for orders where the trade has already been developed, because it will furnish a broader sales outlet through enlarging the field of uses.

OBITUARY.

John Milton Blair Answers the Final Summons.

MEMBERS OF THE National Brick Manufacturers' Association, particularly the older members who took an active part in the early work of the Association, will learn with deep regret of the death of John Milton Blair of Cincinnati. He was a charter member of the Association, signed the original call for the first meeting which was held at Cincinnati in 1886. He was elected president of the Association in 1905 and remained a loyal supporter of the Association in all the intervening years.

"Milt," as his friends were wont to call him, was loyal to every interest with which he was associated. That was



The Late J. M. Blair.

his nature. He was a native son of Cincinnati, having been born there June 8, 1841. Mr. Blair was a brave and efficient soldier during the War of the Rebellion, enlisting as a private in the Second Kentucky Volunteer Infantry, was promoted at different times and finally commissioned Captain, September 5, 1863. He was an ardent member of the Loyal Legion, and served as Commander of the Ohio Division in 1917, and as Recorder from 1918 to 1922, inclusive. He was a member of Ohio Consistory of Scottish Rite Masons (32) and of the order of the Mystic Shrine. For many years he was the head of the J. M. Blair Brick Company, but retired from active business some years since.

DEATH FOLLOWS STROKE OF APOPLEXY.

John J. Kloess, 60 years old, a member of the Kloess Brick Company at Belleville, Ill., died recently at his home in that city. His death was due to excitement when fire broke out in the plant of the company. When the fire was discovered by employes they notified Kloess by telephone. He hurried to the plant which was near his home. The fire was not as serious as the employes feared it would be and the fire department soon had it under control. In the excitement Kloess was forgotten and after the fire had been

extinguished an employe found him by stumbling over his body in the brickyard. A physician was hurriedly called but efforts to revive him failed. It was announced that apoplexy had caused his death. Kloess is survived by the widow, three grandchildren, two brothers and two sisters. He had been prominent in the manufacturing field of Belleville and the east side for many years and his brick plant was one of the oldest in that section of the state.

GOOD PRICES MAINTAIN AT WASHINGTON.

John H. Miller, treasurer and manager of the Washington (D. C.) Brick & Terra Cotta Co., advises us the company has had a very good year so far with prospects of a continuance of the same happy condition the rest of the year. At present they are getting \$19.00 for arch brick and \$20.00 for face brick.

DECORATIVE PROCESSES.

THERE IS IN a reprint from the Journal of the American Ceramic Society, put out in pamphlet form, some notes on historical and modern decorative processes in claywares, by Frederick H. Rhead. The notes indicate a very thorough study on the subject and the pamphlet is profusely illustrated with examples of decorative pottery.

NEW MAN TO HAVE CHARGE OF OPERATIONS.

"The Florida China Clay Co., recently incorporated at Leesburg, Florida, for the mining of Florida China Clay, has secured the services of Mr. L. A. Morris, who has had the active management of the operations of the Georgia Kaolin Co., of Macon, Ga., for the past fifteen years. Mr. Morris will have charge of operations of this company and has already opened up new pits and is now producing a very fine grade of Florida clay. This company is at present operating full time and installing much new equipment and enlarging their plant to enable them to take care of their customers promptly."

A THRIFTY FAMILY.

While a family of musicians has frequently made itself a berth in the public eye, the phenomena of a family of nine sturdy men, engaged in profitable production work, is not nearly so common. In Gay Mills, Wis., where a considerable building boom for a town of that size has been in progress this year, much interest has been shown in a quiet family of nine bricklayers, consisting of a father, seven sons, and a brother. The father is A. L. Gerton of Eau Claire, Wis. Such an instance is reminiscent of the olden days when trades ran in families, like musical talent, or constructive genius.

MATERIAL HANDLING ADVICE.

HARDWOOD FROST and others have organized a material handling and advisory bureau, with headquarters at 10 So. La Salle Street, Chicago, the purpose of which is to furnish reports, make investigations, estimates and designs for material handling among manufacturers, warehouse people and transfer people. Their plea for business is based on the theory that efficient handling is an important factor in reducing the cost of producing and distributing products almost everywhere. And that there is an interesting problem here meriting attention is well enough known. The clayworking industry has been awake to this fact for some years and is at the present time centering a fair amount of attention on the subject of mechanical equipment to assist in handling both raw material and finished products.

PROGRESS AND THE N. B. M. A.

THERE IS AN INTERESTING historical hook-up between the progress of the brick manufacturing industry in this country and the National Brick Manufacturers' Association.

The young man of today when he comes into the business and looks around him and sees a great industry may at times take for granted that it has always been so. He knows probably that sometime in the distant past brickmaking was a crude handcraft, but unless he looks into the subject of brickmaking progress during the past half century he is not likely to get a proper realization of what part the getting together of clayworkers annually in N. B. M. A. conventions has played in the wonderful development of the past generation.

Up until the organizing of the N. B. M. A. at Cincinnati, brickmaking in the main had been a simple handcraft since the days of ancient history. At that time some inventions had been brought out that were being exploited, and the main purpose of the meeting was to inquire into these and discuss the merits and possibilities of improving the process of brickmaking through the use of machinery. And from that time on every annual convention has brought to light interesting new ideas, machines and devices developed to help make progress in clayworking, and out of it all has come so much development that as a matter of fact the art of brickmaking and of clayworking generally has made more progress in 50 years than it had made in 5,000 years previous to that time.

Now, while undoubtedly some progress would have been made anyway, because we are a nation of people who invent machines to do the work that formerly was done by hand, yet no one knowing the history of the past generation in the clayworking industry can question or doubt that the gatherings of men in the industry annually to discuss ways and means and new ideas and theories has been a big factor in making this progress.

The young man of today who is inclined to wonder what the N. B. M. A. has accomplished and what it may do in the future in the way of good to justify membership and active support, can get enlightenment by making an unbiased study of the intimate hook-up of the National Brick Manufacturers' Association with the development of modern methods in clayworking.

PITTSBURGH SECTION HAS HAD GOOD SEASON—FORMER PRESIDENT WILSON, OF N. B. M. A. REPORTS PROMISING OUTLOOK.

COMMON BRICK MANUFACTURERS in the Pittsburgh area are reported to have had an unusually good summer's trade, although at present the demand is slowing up somewhat, which is largely a seasonal condition in this section.

Thomas E. Wilson, president of the Pittsburgh Clay Products Company, and former president of the National Brick Manufacturers' Association, with offices in the Keenan building on Liberty Avenue, in an interview given the representative of "The Clay-Worker," said:

"Pittsburgh brick manufacturers generally have had a good summer season, with an increased demand over the same period of last year. Now, however, there is the usual seasonal slackening up which we look for at this time. Building operations, especially in the suburbs, have been and continue to be very active. I believe that there is no doubt but that the general demand for common brick all through the east is on a good and promising basis, and we look for increasing prosperity right along.

"There appears to be some uneasiness on the part of cer-

tain common brick manufacturers over the fact that foreign-made brick are coming into the United States in increasing quantity. I am reliably informed that these brick are being laid down in New York on the wharves at \$8 per thousand, which of course is a price that puts them beyond competition with the New York product, or with the product of anywhere else in this country, for that matter. Furthermore, there is no doubt that the brick are coming in.

"However, I believe that while the trade in the Atlantic coast cities of New York, Boston and Philadelphia and contiguous sections may be affected somewhat by this attempt to steal our home markets for the foreign brick, the effect elsewhere in the country will be negligible, for the reason that the moment it becomes necessary to pay rail transportation charges the price for these imported brick is going to jump, and jump considerably. In addition to this it is quite likely that, at the price the Holland and Belgian brick are reported to be selling in New York, they will be snapped up in a hurry there, and the New York construction people will take good care to see that none get away to bother our manufacturers in other sections of the country. However, it is a situation which will bear watching, and watching closely." A. T. M.

MORTAR AND ITS COLORING.

COLORING MOTAR and the part it plays in pleasing appearance and architectural beauty in brick walls has come to be so important a matter in the minds of the public and of dealers and contractors that it merits some earnest attention on the part of brick manufacturers.

Mortar is not brick, but it is an essential element in laying up brick work, and it represents anywhere from a third to a half of the material used in the brick wall. Also, it does much to either improve or impair the beauty of face brick in the wall, therefore, while the brick man himself may not make mortar colors or even buy and sell them, he is interested in this matter and should take a hand to help in getting established practices which will insure the best results.

It is a peculiar fact that while mortar colors play an important part in brick work, they have not been made the subject of a great deal of discussion, either in conventions or through the trade papers, and for this reason there is lack of information and uniformity in practices that lead to dissatisfaction and trouble.

We learn from experience and complaints that there are three common enemies to mortar colors. One is cost, one is carelessness, and the other is caustic or the action of lime and cement in combination with mortar colors and moisture. And it is claimed that most all dissatisfaction in mortar colors can be traced to one of these three.

Under the head of cost there is a disposition to save cost by buying cheap, inferior colors, and another disposition to save cost by using too small a quantity of color with the motar, and this is a common explanation of why colors do not show up as well as they should.

Next comes carelessness in mixing and lack of thoroughness, both in stirring and in having exact proportion of color and other material in each batch of mortar.

Finally, there is that chemical factor of caustic, complicated some with efflorescence, and some interesting questions of how to prevent trouble from this source.

What we need is a more thorough course of study and experimental work to establish and set forth the basis of positive practices in the mixing and using of mortar colors. There should be a study of both the material in various combinations advisable to use, then a study of colors and a standard classification of them, and finally more specific instructions on the quantity or the ratio in mixes and how to do the mixing and get positive and satisfactory results. Those who have positive information on this point will be helping the cause along if they will send this in, because there is need for better understanding and improved practices in the matter of mixing and using motar colors in brick walls.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.

Seeing Is Believing.



ALONG THE WESTERN slope of the beautiful Berkeley hills, overlooking the San Francisco bay and its ships laden with commerce, looking out through the Golden Gate and into the boundless ocean beyond, stood in the evening sunlight several days ago, a group of weird sentinels, slender towers, great fingers, if you please, pointing to the sky. About them torrid beds of ruins were shooting up fitful flames, and broken gas mains poured out sheets of fire, presenting a lurid ghastly scene through most of the night. Those sentinels were the brick chimneys. These, with a scattered brick wall, the foundations, and tangled masses of pipe and plumbing were about all that was left of a large portion of the choicest residence district of Berkeley. It took but three hours for the flames, fanned by a fierce gale, to sweep away over fifty blocks, over 650 homes and apartment houses. The great bulk of these homes were of wood, a few of cement, some of shingles and they almost exploded as they burst into flame before the terrific heat.

Those sentinels were delivering a silent but eloquent message. Had the material of which they were made been used for these houses, had fire-proof roofs been built, that fire, originally a grass fire, could never have been. Nine million dollars in values could not have been swept away in 'three hours' time, thousands of refugees could not have been turned out to seek shelter for the night.

The Board of Directors of the Common Brick Association of California, met in San Francisco during the latter part of last month; but the local secretary reports that nothing of importance was done. Most of the trade in this territory attended the meeting, which was for the most part a get-together and get-acquainted affair, laying the ground for future co-operation. First-hand reports of the Japanese disaster were received; and the lesson of the Berkeley fire considered. W. W. Dennis, one of the Board of Directors and manager of the McNear Brick Agency of San Francisco, in a recent interview said: "Use of brick in construction has never been more widespread than it is today, but the public must not be allowed to overlook the frightful lessons taught by these two disasters. Our campaign is not to be one of mere propaganda. It is the performance of a civic duty. We must insist that owners, architects, and builders face their responsibility to the public in selecting the materials they use."

The Mining Bureau of the Chamber of Commerce of Sacramento, California, placed on its program for the close of the month, a visit to the pottery plant of Gladding, McBean & Co., at Lincoln in Placer County. Here is the oldest, largest, and most famous clay-pit of California, and one of the largest pottery plants of the West. At the meeting in which this trip was arranged, it was pointed out that the clay industry of central and upper California was still in its infancy, but owing to the excellent quality of the clay, deposits of all grades, capable of almost unlimited development. In production, Placer County ranks next to Riverside County in the South. The pottery clay produced in this county and the adjoining county of Amador is being used in architectural terra cotta; drain pipe; material and roofing tile; chimney, flue and sewer pipe; garden furniture, stone-ware, porcelain, and fire-clay products.

A number of the plants of California still import clay from England for their finer ware; but excellent kaolin deposits

have been discovered and some are being worked. The first large discovery of kaolin is known to have been made in 1884; but the discoverer died without revealing the location. It was not until 1918 that it was rediscovered by Thomas Normile. Now, kaolin deposits are being worked at Carbondale and Ione in Amador County. A mine is being worked also at Calistoga in Napa County. There is an unworked deposit near Kelseyville in Lake County, at the Mount San quicksilver mine. In Nevada County are deposits at the DeGolia ranch northeast of Nevada City and at Pine Hill. The latter is a 160-acre dome of pure kaolin, but inaccessible. High-grade kaolin has been uncovered at Beltane in Sonoma County, and two miles southeast of Smartsville in Yuba County.

Nearly every county in Northern California has great beds of pottery, brick and tile clay awaiting development, many of them worked in a small way. The Valley Springs deposit in Calaveras County is being developed by the California Pottery Company in a big way. Shasta and Siskiyou Counties far to the north have immense clay deposits undeveloped. Michigan Bar, in Eldorado County has a great deposit undeveloped. And over west of the Coast Range at Mendocino City and Ukiah are also deposits. Extensive deposits are beginning to be worked in the neighborhood of Sacramento, the capital city; and the trip of the Chamber of Commerce but emphasizes the value of developing these resources to a greater extent.

Negotiations have been about completed for the transfer of the interests of R. W. Hull, Sr., and R. W. Hull, Jr., in the U. S. Refractories brick plant to a group of local capitalists of San Luis Obispo, who are already stockholders in the company. The company is manufacturing "Incello," an insulating brick, and a high-grade fire brick, and shipping its products to eastern markets. It was but a few weeks ago that the construction was completed, and the company began filling orders. The Hulls will remain in San Luis Obispo and be indirectly connected with the company.

Sojourners from the Northwest are predicting the doubling of lumber prices because of the heavy demand from Japan. This is probably exaggerated, but it certainly does seem time to "Make brick while the sun shines." SUNSET.

San Francisco, Cal.

RED CLUBS.

WE FIND IN the Bulletin of the National Association of the Building Trades employers' brief mention that, "according to the Protective Order of Loyal American Workers there are about 2,000 radical (Red) clubs in the United States with over a million members supporting more than 300 papers to which working men contribute from \$2.00 and up each week."

There is another story going the rounds that some of the labor union leaders have issued a warning against radical propaganda in the United States, which in turn is branded by others as a sort of smoke screen kicked up by labor union leaders themselves for ulterior purposes. And along with it a hint that the real radicalism is in union labor ranks where it is not supposed to be.

No matter where they may be found, inside of labor union ranks, outside of them, or on the side lines, this is no country for red clubs or radical agitation. And as soon as any of it is recognized anywhere those engaging in it should be advised to mend their ways or change their citizenship to some other country.

Mention the CLAY-WORKER

When writing to advertiser

Mention the CLAY-WORKER

NATION READY FOR BIG BUILDING YEAR.

Japan Can Draw Upon \$425,000,000 Worth of Reserve Material Before We Feel Pinch.

AMERICAN BUILDING material manufacturers have an estimated reserve capacity worth approximately \$426,865,000 for the Japanese reconstruction program before demand so far approaches supply as to greatly inflate domestic buildings costs, says the current Dow Service Daily Building Reports.

Domestic construction for the entire country is consuming basic structural materials this year at the rate of \$1,083,135,000 per annum. The estimated total basic structural building material output capacity for the United States has been placed at \$1,700,000,000, but at no time has full capacity ever been employed to permit the production of basic structural commodities sufficient to reach that value.

Building material manufacturers, receiving recent official inquiries from the Department of Commerce asking for information as to their ability to meet Japan's needs in their lines, and what price movement might be expected, if any, assured Secretary Hoover that they would be able to meet the demand at domestic open market price lists covering corresponding quantities and delivery conditions.

It was figured that Japanese emergency building material requirements would be in two classes; that for temporary construction and that for permanent, more or less earthquake-proof buildings. The temporary building material shipments come at a time when, normally, domestic building construction is not at its highest pitch.

It can easily find available building material reserves, as the building material industry this year was headed for a production representing a valuation of about \$1,500,000,000, owing to the fact that in many plants throughout the country additional equipment has been installed this year to take care of the normal domestic demands of the building industry. The manufacturers estimate that further contemplated additions will be sufficient to increase the gross value of basic building material production to approximately \$2,000,000,000 per annum in 1924.

Had there been no midyear buyers' strike the margin for the Japan emergency would have been far less. The turn toward greater national building activity since July 1, however, is significant. August, for example, shows a national 56.4 percent gain over the same month in 1922.

In the national gain for July and August for two years, 1923 leads over 1922 by \$44,000,000.

Hudson River brickmakers are piling up a reserve estimated to be in the neighborhood of 420,000,000 brick, or about half as many again as they had burned and ready for shipment at this time last year. There is more Hudson hard brick being distributed to jobs in this city now than there were at times in the middle of the building season. One indication of price stability is that forward delivery contracts are not readily placed.

BABY SAVED FROM DROWNING BY BRICK.

IT IS NOT often a brick serves as a life preserver, but a two and a half year old baby saved itself from drowning by holding onto a brick in a deep well into which it had fallen, until rescued by its mother. All this happened at Shreveport, La., and was heralded in the paper under the heading, "Baby Saved by Brick When It Fell in Well." The Dixie Brick Co., of Columbus, Ga., has reproduced the item in a clever bit of advertising, in which they state the child must have been clinging to a Dixie brick, and add, "This baby was saved

from drowning by brick (unusual), but there is no telling how many babies' lives have been saved from FIRE by building homes with brick."

FIRE PREVENTION EXPERT RECOVERING FROM SERIOUS ILLNESS.

THE MANY FRIENDS of Ira H. Woolson, consulting engineer of the National Board of Fire Underwriters, New York, N. Y., will be glad to know he is now recovering from an attack of typhoid fever in August during the first week of his vacation. Professor Woolson had planned to spend a month or six weeks up in the woods of Maine, and began his vacation with every prospect of a delightful sojourn. After about a week in camp he was stricken with an illness which two physicians, who happened to be in the camp, decided gave evidences of typhoid fever. It was decided to move Professor Woolson to a hospital immediately and the nearest one was fifty-eight miles from the camp. It took seven guides and two volunteers, one of whom was a physician, to get him out of the woods, and the trip was made by canoe, and on foot, which meant the patient was carried in a litter on the shoulders of the men, and finally in an auto truck. The trip consumed thirteen and one-half hours, but the patient stood the journey remarkably well; several weeks were spent in the hospital, and after convalescence in the Maine woods, he is back in New York ready to take up active work again.

MARYLAND COMPANY DEVELOPS NEW BRICK.

The Savage Mountain Fire Brick Co., of Frostburg, Md., after a series of extensive and exhaustive experiments is believed to have produced a high-grade hand-made brick that will give maximum service in oil heating furnaces and is believed to be the best brick of the kind that has yet been placed on the market. The series of experiments were carried out over a long period of time, in conjunction with Raymond M. Howe, Senior Fellow of the Refractories Manufacturing Association Fellowship at the Mellon Institute of Industrial Research at Pittsburgh, Pa. The brick is much denser than the one formerly used by the company and will contract and expand without spalling. It will stand a heat of approximately 3300 degrees Fahrenheit and will show a negligible amount of expansion and contraction. It is named "S. M. Extra" and in its manufacture it goes through double grinding and double tempering.

WINTER BUILDING PROSPECTS.

There is interest now in the question of to what extent building operations may continue through the winter. There has been persistent effort for several years now to keep up the good work as much as practical through the winter, and last winter weather and other conditions were so favorable that good progress was made. There is a natural inclination to keep up the good work this winter. The main handicaps in the outlook are the high cost of building and the probability of severe weather. If we are favored with a mild winter work should go along all through the winter while if it is an unusually severe winter, this will naturally retard building as well as interfere with clayworking. Taking the situation as a whole, the right cue for the clayworker seems to be to keep the work going to full capacity until we run into winter weather. There are no stocks on hand now and there is no danger of accumulating enough surplus stock between now and the bad weather of winter to be burdensome. So the thing for the clayworkers is to keep busy at production all through the fall and as far into the winter as practical.

THE HOME OF PLUTO.

The American Face Brick Association to Again Meet in Annual Convention at French Lick Springs Hotel.

THE FACE BRICK Manufacturers and dealers are scheduled to meet again at French Lick Springs, Ind., December 4, 5 and 6, 1923. Those who have attended previous meetings will look forward to the meeting as an occasion of unalloyed joy. The home of Pluto is known far and wide as America's greatest health resort. Those who can plan to spend the week there will be able to combine business and pleasure in a most delightful manner. The program has not yet been announced, but it can be taken for granted it will provide for a series of most instructive, as well as friendly conferences.

The springs are in a beautiful valley of southern Indiana, forty miles from the center of population of the United States and amid the most charming and picturesque surroundings. The immediate landscape is very attractive. The golf links have been much improved, so this source of amusement will prove a delight to all who indulge in that health-giving sport.

The new addition to the hotel has been completed, giving increased facilities for the accommodation of conventions. This new section is designated as the "addition deluxe" because of its perfect appointments. The beautiful lobby of which we present a miniature view will afford delegates and their families a delightful place in which to while away the hours between sessions and those desiring will at opportune times be afforded the privilege of dancing to the accompaniment of a fine orchestra. Good music has always been a feature of French Lick Springs Hotel. The hotel is operated on the American plan, the cuisine is unexcelled and of a character which has made the name "Taggart" a synonym for good "eats." To the newcomers who are not familiar with the charms of French Lick, we commend particularly the baths. Departments for men and women are on the first and second floors, respectively, and connect directly with the ground and first floors of the south wing of the hotel, and may be reached by elevator from any part of the main building. The arrangement and furnishings are luxurious. Every convenience and comfort being provided.

A handsomely illustrated brochure giving full particulars as to the hotel, its location, pleasure grounds and how to get there will be sent free to any reader of The Clay-Worker on request. See page 319 of this issue.

THE DUTCH AGAIN TAKE NEW AMSTERDAM.

The Metropolitan press has had much to say of late about the importation of building brick from Holland. To some it may have sounded like a joke, but instead it was a stern reality of which we are offered an ocular demonstration in the shape of a good hard burned common brick, for which

we are indebted to Jotham Post, vice-president of the National Brick Manufacturers' Association, of East Williston, Long Island. It is one of a shipload of brick recently unloaded on the New York market. It would not win a prize for either shape or color, but meets all other requirements for a common building brick. It measures $8\frac{3}{8} \times 2\frac{1}{8} \times 3\frac{3}{4}$, and weighs four pounds and two ounces.

SIMONS BRICK COMPANY INCREASES OUTPUT.

Walter F. Malone, superintendent of the big plant of the Simons Brick Company, Los Angeles, Calif., writes they have added four new machines to the plant at Simons during the past year, which increased the daily output to 600,000 common building brick per day. This gives color to the claim of the



Main Lobby French Lick Springs Hotel.

Simons Brick Company that their Simons plant is the largest brickmaking plant in the world, and in addition to the plant at Simons they operate three other plants which gives them all told a daily output of 750,000 building brick.

W. P. BLAIR MAKING SLOW RECOVERY.

The nestor of the paving brick industry who may well be called "The Grand Old Man" of that branch of clayworking. Will P. Blair, of Cleveland, was a caller at The Clay-Worker sanctum recently, and while he showed unmistakable signs of wear and tear incident to a severe illness which put him out of commission for a month or more, he assured us that given time he will soon be able to hold his own again in the routine work of boosting brick pavements. If good wishes count, his complete recovery is assured.

Most of the machinery of the clayworking plants has seen enough active service this year that it should be a busy winter with the machinery and supply men on replacements and repairs. And it is now in order to say, start your work of overhauling and repairing early.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

In the Market for Miniature Tile.

Editor The Clay-Worker:

We desire to get some miniature Toupet tile made, and would like to get in touch with the name of a manufacturer who can make same for us. If you can help us out, will appreciate the favor.

Very truly,

SOUTHERN BRICK & TILE CORPORATION.

Atlanta, Ga.

Wants Information Relative to Cemetery Clay Markers.

Editor The Clay-Worker:

Can you put us in touch or give us the names of the manufacturers of clay tile markers used to mark and number the corners of cemetery lots.

Our local cemetery has laid out another addition and is in need of several hundred of markers numbered 1300 to 1460, inclusive, and another series numbered 1500 to 1700, inclusive and are anxious to secure these in time to install them before freezing weather.

We do not recall ever seeing these advertised in any clay journal and do not find anything of this kind advertised in Sweet's Index, so are at a loss to know where to look for them.

Thanking you in advance for any information you can give us in this connection, we are,

Yours very truly,

GRINNELL CLAY PRODUCTS CO.,

By Ross V. Coutts,

Secretary.

Building Situation Good in Iowa.

Editor The Clay-Worker:

Your letter at hand, giving the information asked for in regard to the brick cleaning machine. Please accept our thanks for your courtesy.

There is an unusual amount of building in this immediate section, new school buildings being erected in both of the prominent towns of the country, besides much activity in other building construction. The price for building brick averages \$11.00 to \$11.50 per thousand, with competition quite keen.

Yours very truly,

Industrial Supply Co.

Saxton Brick Company Making Improvements.

Editor The Clay-Worker:

The Saxton Shale Brick & Tile Co., of Saxton, Bedford County, Pa., has been making some very extensive improvements at their plant, including the installation of an automatic cutter, conveyors to feed the grinding pans, waste end elevators, and other appliances. Archie Sproul, a veteran in the clayworking business, has had charge of the improvements and expected to have everything completed and in good working order by the latter part of September. The com-

pany when in full operation turns out 50,000 high-grade face brick a day.

A. Reader.

Going Into the Brick Business.

Editor The Clay-Worker:

We are going to embark in the clayworking business, so please send us The Clay-Worker. We want to get in touch with manufacturers of soft mud machines for making brick, and will appreciate your assistance.

Very truly yours,

Jackson, Mich.

Henry Penrose.

Florida the Land of Marvels.

Editor The Clay-Worker:

Florida, as you know, was first discovered by Spaniards and partly settled by them, and of late years discovered by Americans and foreigners of the whole world. The architecture of Spain is the vogue here, and Miami, the "Magic City" (appropriately named) is building on Spanish ideals both in commercial and home mansions. Beauty and novelty and art expression is found on every hand in the city and suburbs; the ornate is the shibboleth here.

The first thing that caught my attention was the extension of the McAlister Hotel of eleven stories and the outer walls built from the ground up to the roof of burnt clay, and hollow tile. One other building, the Davenport & Rich, is of similar construction. In fact, there are many others, hotels and office buildings being built on a similar plan.

The outside tile walls are plastered with a coating of cement and a final finish is given of stucco slap-dash style with the result that a building has the semblance of stone, the ornamental features of the fronts as columns, entrances and decorative forms in all details are stuccoed.

Now, as to residences, the Spanish and Moorish art holds universal sway here and it is almost a mania with architects as well as the people who aim to possess fine homes. This passion for the ornate culled from Spain and Asia has the promise and potency of making Miami not only the Magic City, but the most artistic and most beautiful zone in the United States. Coral Gables, a suburb of this city, in all the foregoing is supreme and types it all. The Chamber of Commerce and other civic bodies as well as city officials and business men are of the live wire breed, fully imbued with the spirit of progress and aim to make of this the greater city and its phenomenal rise to the "Magic City" insures its coming to pass.

Yours sincerely,

THE FLORIDA SCRIBE.

IOWA CERAMIC SCHOOL STARTS THE SCHOOL YEAR WITH BRIGHT PROSPECTS.

Professor Paul F. Cox, head of the Department of Ceramic Engineering, Iowa State College, Ames, Iowa, writes things are moving along nicely in the department. This year they will graduate five students, the first time there has been more than two graduates from this department. For the first time the students about the campus are manifesting an interest in the field of ceramic engineering, with the result that this year there is an enrollment of twenty-two in this course, instead of twelve or fourteen, as has formerly been the case. In common with the other ceramic schools, the Iowa school is using Lovejoy's "Burning Clay Wares" as a text book in the course on kilns, together with the Lovejoy's "Drying Clay Wares."

Written for The Clay-Worker:

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



PARTMENT HOUSES, SCHOOLS, churches, business edifices, theaters, and practically all other kinds of public buildings erected in great numbers throughout the State of Wisconsin, contributed to making the year 1923 the banner year in volume of building done. An unprecedented building boom came over the city of Milwaukee early last spring, and continued until well into

the summer, when the price rise that followed the excessive demand on building materials exerted a moderating effect on what was bidding fair to be the greatest demand on supplies ever experienced. Even with the slight slump that has set in since later in the summer, the amount of building permits issued so far this year is almost equal to the amount for the entire year of 1922, and with fall business looking very promising to those who delight in volume business, it is expected that last year's totals will be exceeded by several millions of dollars, before January, 1924.

During the early months of the present year, there was an acute shortage of domestic common brick in Milwaukee. The tightness of the situation was augmented by the fact that the Chicago manufacturers had their hands full in supplying their own local demand, and could not possibly make satisfactory shipments to this city. With the completion of the new plant of the Burnham Bros. Brick Co., south of Milwaukee, the situation was somewhat relieved, and with that plant now ready to handle any demand up to 40,000,000 a year, the shortage of common brick is considered permanently alleviated—at least for the next hundred years, the clay deposits at the new plant being calculated to supply the needs for that period of time. The shortage which reached its peak during the past season, had been prevalent since the resumption of building operations at the close of the war.

The current report of building operations in the city of Milwaukee, issued by the office of W. D. Harper, building inspector, shows that building permits representing \$29,665,750 worth of construction work, have been issued during the first nine months of this year, in Milwaukee. This represents an increase of more than 25 per cent over the same period of last year, when \$23,095,596 worth of construction work was authorized by the building inspector, up to October 1. The grand total of work for which permits were issued in 1922, was \$31,337,645, which was considered a record year. From present indications, the volume of building this year will exceed \$35,000,000.

The report shows that for September, 1923, more than 3,100 permits, representing a valuation in excess of \$3,100,000 were issued. This compares more than favorably with the record achieved during the same month of last year, when 3,322 permits for a valuation of \$2,163,141 were issued. During one week of the month 824 permits for a valuation of \$693,008 were issued. The report compares this with the corresponding days of 1922, during which 842 permits for \$531,502 were given out. These figures bear out the statements of leading brick and clay products dealers and manufacturers that the year has been consistently better than any other record ever established in Milwaukee.

It is pointed out by those who have followed the development of the building situation throughout the state, that the building operations have been for a high class of structures. Data compiled in connection with the housing situation, shows that most of the residences erected were of a sub-

stantial type, with best quality of materials used, while large high class apartment houses were built in quantity, wherever the population warranted their construction. The present status in the housing problem indicates that a considerable amount of building must still be done, before the supply catches up with the demand.

In spite of the fact that the past few weeks were considered the slump season of the year so far, the amount of work being done is borne out by the list of contracts awarded to the Ricketson & Schwarz concern of Milwaukee. Among the larger jobs being supplied with face brick by this prosperous concern, are: The Carmelite Fathers' Monastery at Oconomowoc, the Holy Family Hospital at Manitowoc, the addition to the Bear Brand Hosiery factory at Waupun, the new administration building and addition to the Mercy Hospital at Oshkosh, and a number of large structures in Milwaukee, such as the new theater being erected at Seventh and Mitchell Streets, by the Saxe Bros., which will use about 70,000 face brick, the new St. Benedict the Moor Mission, at Tenth and State Streets, using about 100,000 face brick, and the new half million dollar warehouse and garage being erected at Fourteenth and Clybourne Streets, by the Wisconsin Telephone Co.

Bricks for a number of large apartment houses are being furnished by the Norman J. Pipkorn Co. These include the O'Neil Apartment building to be erected at Prospect and Ivanhoe Streets, for which the Pipkorn concern is supplying about 75,000 bricks, and the Klemschulte Apartments, which will soon be constructed.

Common brick are being supplied for a large number of big building enterprises this fall by the Burnham Bros. Brick Co. Among other jobs supplied by this concern, will be the Carpenter building, at Sixth Street and Grand Avenue, which will cost about \$1,500,000; the new unit to the Electric Company's power plant at Lakeside; additions to the city's water pumping station, and for such part of the great Jones Island Sewerage Disposal plant as will be built this fall. About 300,000 interior bricks for this project will be supplied by the Burnhams.

A BADGER.

OIL BURNER MANUFACTURERS FORM ASSOCIATION.

THE AMERICAN ASSOCIATION of Oil Burner Manufacturers, a national organization of both home and industrial oil burner manufacturers, was recently formed in Chicago. Broadcasting accurate data concerning oil burning and the oil burner industry is one of the Association's principal aims. Wallace C. Capen, Home Appliance Corporation, St. Louis, was elected president, and Leod D. Becker, editor of Fuel Oil for Heat and Power, Galesburg, Ill., was made acting secretary. Temporary headquarters will be maintained at 518 Bank of Galesburg Building, Galesburg, Illinois, and Room 605, 20 E. Jackson Blvd., Chicago. The Association will gladly answer inquiries from interested individuals or firms concerning all kinds of oil burning.

CHANGE IN LACLEDE-CHRISTY SALES FORCE.

M. G. Babcock, formerly sales representative of Laclede-Christy Company, of Pennsylvania, has succeeded P. M. Offill, resigned, in charge of the Pittsburgh office, Laclede-Christy Clay Products Company of St. Louis, at 901 Oliver Building, Pittsburgh, Pennsylvania.

The sewer pipe folks have not been talking up as much in meeting as some of the other clay products folks, but it looks like they have been selling their stuff, and that they are going to have good times right along.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
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Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 80. October, 1923. No. 4.

CURRENT COMMENT.

"BUILD with BRICK."

* * *

Let's hang it out again where all may see, read and ponder.

* * *

Then get together some brief and pertinent answers to the question of why.

* * *

There is plenty of building being done, but more brick should be used in home building.

* * *

The fall days this year should be more mellow and melancholy for the average brick man.

* * *

The anthracite strike has been settled, with the usual result in coal contentions—the consumers will pay for it in higher prices for the coal.

* * *

There is not enough tonnage in hollow tile being sold, and one reason why is that the building public has not been as thoroughly sold on this product as it should.

* * *

Developing new trade is always better than fighting with the other fellow over what is already in sight, and the field of uses for burned clay products is so big that there is plenty of room for this kind of work.

* * *

The average home or the average man costs a lot more today than it did ten years ago, but not as much more in proportion as the average man earns today. So, when analyzed from this angle home building costs are not high. And the need is urgent enough for still more homes that it

looks like a continuation of prosperity in the building industries.

* * *

Every man who figures on keeping up his kiln all through the winter should bear in mind that a reserve pile of fuel is a good thing to have stored away handy.

* * *

Frosty weather will likely shift building and the call for brick and tile into a slower gear, but the present signs are that it will not mean anything like a full stop.

* * *

Friendly rivalry in the clay products is one thing that we should all welcome. Cutthroat competition is another and different thing that we should all seek to avoid.

* * *

The year so far has not yielded the volume of trade in farm drain tile that it should, so there is an interesting question of what may be done to improve conditions here.

* * *

The N. B. M. A. Annual, like Christmas, comes but once a year, and it is also like Christmas in that it is a memorable occasion that we should look forward to with pleasant anticipations.

* * *

That real salesmanship which has been given a rest because the demand for brick has exceeded the supply so far this year should be "trotted out" and burnished up ready to go into action again.

* * *

The leading question to many a drain tile manufacturer these days is, "How may I go about selling more drain tile at a price that will yield a reasonable profit?" Why not have a session on this subject at the N. B. M. A. convention?

* * *

What is the answer to all this? More advertising and more salesmanship? If so, surely those poster signs telling the world to build with brick, to drain their farms with tile, and so on, will help the cause along more for less cost than any other one thing.

OUR FIRE WASTE.

Fire Prevention Week, which this year was the week of October 7-13, has served again to remind us of our annual waste by fire most of which is preventable. Figures show that notwithstanding efforts at precautions, and the preachments of insurance companies and others concerned in fire prevention, the loss in this way has gained 40 per cent in the past five years and now stands at a total above half a billion a year. Surely with facts and figures of this kind staring us in the face we should be impressed with the need for more active attention to the matter of fire prevention.

PRICES AND PROFITS.

In the sale of common brick, hollow building tile and other structural clay products which have no special artistic element to enhance their beauty the basis of price is naturally the cost of production plus a fair margin of profit. Face brick, terra cotta, tile and some other items which go more to the artistic may have beauty elements that will command a price enough above the cost of production to put a price upon them from another basis than the purely commercial one of cost. In the main, however, brick prices are put at whatever level we find them with the thought in mind of returning a fair profit to the producer after all costs have been paid. There is need for special attention to this subject right now because of a natural inclination to trim prices down wherever practical so as to reduce the cost of building

operations and to encourage a continuation of active building. The problems we should center on here is that of reducing cost if it is thought advisable to try and reduce prices. To reduce prices without reducing cost means reducing just that much the profits in the clayworking industry. It means in short that the clayworking industry should during the fall and winter center its attention earnestly on the matter of cost reduction in every step of the work with a view to trimming this down by better machines and methods and greater efficiency in burning. When we can effect actual and not imaginary reductions in cost, then we will be prepared to meet a situation calling for lower prices.

HOME COSTS ANALYZED.

We are now getting some analysis and comparisons as between home costs and average incomes that is paving the way to a better understanding and to less dissatisfaction with what is termed the high cost of building today.

As illustrative of home building cost analysis an official bulletin of the Department of Commerce estimates that for a six-room brick house the index cost for August was 116 per cent above the index of 1913. This means that the average six-room home should cost today just a little more than double what it would cost in 1913.

On the other hand, a recent estimate of earnings in the United States compared with 1918 show an increase of about 60 per cent. The earning comparison if extended back to 1913 would perhaps show above 100 per cent or would be practically on a par with the increase in building cost.

When we consider the general increase in wages and in the earning capacity of the average worker and take note of the added conveniences and luxuries required in the home today which increase materially the total cost, it puts the matter in a different light and shows that all told we are not seriously out of balance.

The one thought for the brick men and for the hollow building tile men to center attention on and make good use of under present conditions is that of the reward of permanence as a justification for burned clay products in building operations. Since building costs a considerable sum anyway the logical argument is, spend a little more and make the investment in building permanent and there will be no cause for regret.

THE VICIOUS CIRCLE AND THE OTHER.

In opposing the idea of a campaign for boom building operations next year the editor of the *American Contractor* says that the result of such a course is unwholesome bidding for the service of craftsmen and a consequent raising of wages to points out of all proportion.

Continuing, he says that it is quite natural according to human experience for the efficiency of workmen to dwindle in proportion to the effective need for their services. And says: "Neither the New York \$18.00 a day bricklayer or the Chicago \$100 a week plasterer feel constrained to overwork himself because the pay envelope is fat."

In other words, boom periods and high wages create a sort of vicious circle in which higher pay tends to poorer work because workmen are not concerned about holding their jobs and know that others are ready for them, whereas if times were not booming and the next job was uncertain and wage tendencies were downward the workers would exert themselves to do better work and thus the circle would be reversed and become more virtuous.

We have a theory that in normal times high wages are paid to the best workmen because they earn them. They put more knowledge, skill and effort into their work and

earn more, consequently they are able to obtain more for their services than the average. This is the right and logical situation and when we get into other conditions, conditions in which higher pay means less efficiency, we have a vicious circle that ought to be stopped and turned into a virtuous circle in which workers and others gain in wages in proportion to the service rendered.

THE OUTLOOK.

Trade continues active in brick, hollow building tile, sewer pipe, flue linings, mortar colors and in the main the outlook is good for a heavy volume of demand till winter comes and curtails building operations somewhat. Right now for the month it looks like the main trouble will be getting cars and making prompt shipment. A little later on frost and snow will curtail building work in many sections and this will make a difference, notwithstanding the efforts to continue and the successful carrying on in the larger cities with big building undertakings. For the current month, however, it looks like busy times that will insure most of the clay plants an active running and a good clean-up, with no surplus stock on hand, especially if they can get cars and keep the products moving promptly to the jobs.

BIG ITEMS IN RAILWAY TONNAGE.

What the railroads do in the way of tonnage transportation and what constitutes the big outstanding items in making up this tonnage has been set forth for what is termed the Class One roads during 1922, by the Bureau of Statistics of the I. C. C.

The figures given show that during the year the railroads handled a total of 1,859,000 tons of freight. There were times when about a million cars were busy in the course of a week in the handling of this great annual tonnage. The figures show that just about half the tonnage was made up of the product of the mines, of which the biggest item was coal and coke. Next came agricultural products with a total for wheat, corn and oats of 221,851,000 tons, followed by forest products with a total of 172,930,000 tons.

Brick, cement and hollow building tile are not specifically listed among these major items, but are probably included in a grouping of manufacturers and miscellaneous articles with a total for the year of 426,290,000 tons.

The object lesson we get from a study of these figures is one explaining why we have commonly a car shortage and congestion during the fall and early winter. This is the period of heavy movement of coal and also of the heavy movement of agricultural products, which taken together make up more than half the total railway tonnage. There is persistent effort being made to get the coal business on an all the year basis, that is to get coal moved and stored ahead of needs during the summer months. This would unquestionably help considerably in balancing up the movement of railway traffic, and efforts along this line should be continued. Meantime there is in these figures a reminder that shippers of other products should seek in so far as practical to develop their heavy movement during the first nine months of the year because the heavy congestion usually runs from the first of October till the end of the year.

TAX TALK.

Most of the tax talk of the day turns to complaints that the wealthy escape their share of the tax burden by investing their money in tax exempt securities. So there is a drive on to stop the issuance of tax exempt bonds by either the government, state, counties or municipalities.

As a matter of fact the argument here is in error on several accounts. It is not just the wealthy who are favored with tax exempt securities. Anyone, no matter how poor, who

has \$50.00 or more in savings can invest this in government bonds and other tax free securities, and the indications are that many poor people have their fair share of this form of investment. Also it may be argued that if government bonds, municipal bonds and other securities of this kind were made to pay taxes they would either have to carry a higher interest rate or be marketed below par, and the result in either case would be an additional tax burden to be met somehow and through the same sources that most taxes are raised.

There is altogether too much fault finding and not enough getting at the real meat of the matter. There is no such thing as a painless system of taxes. The only way to make the tax burden lighter is to reduce the taxes and the conditions which make the heavy tax burden necessary. It means we should cut out wastefulness in the administration of government affairs both national and local, and this may be done by having the governments take less hand in business and putting more business in government methods, all of which will be good within itself.

And after all, there is really another side to this tax thing. Quite a lot of the taxing on lands, say for good roads building, is more than compensated for by the increased value it gives to farms along the way. Where good roads add materially to the value of farms as well as to the convenience of farmers those who are served by the roads should be willing to pay taxes necessary to construct them.

It looks like we have too much talkative argument for political effect in this tax thing and not enough analytical study directed toward getting business-like results.

THE FALL PICK-UP IN BUILDING.

Following a little let-down in building operations in the early summer there was a noticeable pick-up in the fall, starting even in the dog days. August all told was a good month and it broke some records in business in cement, brick, sand and gravel and other building material lines. Also it brought a revival of big building projects and some indication that strenuous efforts will be made to continue building operations right through the winter. All this points toward the need to keep the kiln fires burning in the brick yards right along to supply the needs.

THE BOOK OF SMILES.

The law of average holds good with The Book of Smiles for October. One page in particular carries enough funny stuff to make good for the whole issue, under the head "Nutty Nonsense." Here is a subtle one:

"Warden," said the criminal, who was ticketed to the gallows, "I need some exercise." Just what kind of exercise do you want?" asked the warden. "I'd like to skip the rope," he grinned.

And then, this one:

Professor: "What insect lives on the least food?"

Bright Stude: "The moth—it eats holes."

And this:

"Sometimes when we see certain of the younger generation perform we know Darwin was right."

There are numerous others in prose and verse, witty and terse, and in the latter we may class one page ad, which reads as follows:

YES!

the smaller plant also can get a size for its needs, because

THE STANDARD STEAM BRICK DRIER

is made in many smaller sizes as well as the larger ones.

For additional information, see ad on page 332.

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A HINT ON ADVERTISING.

The man with an order to place doesn't hunt you up in the city directory these days. He hasn't the time. If he can't find you in your trade magazine he can and does find somebody else, and that somebody else books the order.

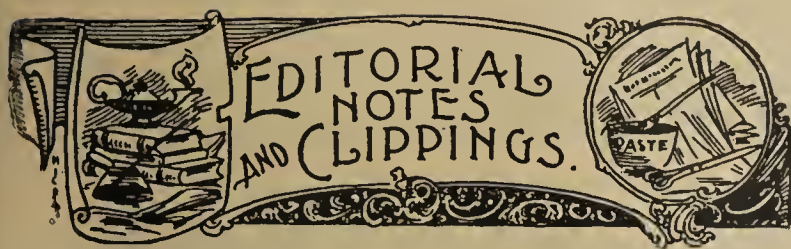
Moral: Advertise in your trade paper.

PROFESSOR PARMELEE PROMOTED.

The many friends of Professor Cullen W. Parmelee, who has been connected with the Ceramic Department of the Illinois State University at Urbana, since 1916, will be pleased to learn that he has been promoted to the head of that department. He had been acting head for the past year and well deserves the promotion.

TRADE LITERATURE.

We are indebted to W. D. Richardson, of the Ceramic Engineering Co., Columbus, Ohio, for an interesting booklet entitled, "Engineering Service to the Clay Industry," and tells in an interesting and instructive way the modern method of solving problems connected with the manufacture of brick and other heavy clay products for structural purposes. There is a chapter on designing and construction of plants, another on remodeling plants, then follows advice on machinery equipment, dryers, kilns, and producer gas and gas producers. A copy may be had for the asking. Address Mr. W. D. Richardson, Shultz Building, Columbus, Ohio, whose ad appears on page 406.



J. P. and Will F. Cooper, of Hollow Rock, Tenn., have announced that they will install a new brick kiln at their plant.

Frank Roehmer, an employe of the Laclede-Christy Clay Mine, at Wellsville, Mo., suffered severe cuts on the head and bruises in an accident at the mine.

The Parkersburg Clay Products Corporation has been formed at Parkersburg, W. Va., with a capital of \$250,000. The incorporators are G. A. Dudley, B. F. Miller and George C. Mead.

William B. Reitmeyer, Pottstown, Pa., for many years operating a local brick manufacturing plant, died Sept. 23, at the age of 87 years. Up to a few months ago he was active in business and attended to such duties daily.

The Walsh Fire Clay Products Co. has installed another locomotive engine and a number of new freight cars at its plant in Jonesboro, Mo. These, with their two steam shovels, will enable them to load from ten to twenty cars per day, when running full force.

W. S. Dickey, the well-known clay products manufacturer of Kansas City, Mo., is being prominently mentioned for Republican national committeeman from Missouri. In fact it is believed that the race lies between the Kansas City brick and clay manufacturer and Dr. C. B. Clements, state chairman of the party in Missouri.

The Eagle Electric Porcelain Co., Trenton, N. J., recently organized with a capital of \$100,000, has tentative plans for the operation of a local plant for the manufacture of a line of high grade electric porcelain specialties. The new company is headed by Ometto and Romileo Casciani, and is represented by George A. Cella, 147 East State Street, Trenton.

John Messenger, an employe of the brick plant at Table Rock, Neb., was seriously injured when he was buried underneath a clay bank, which caved in. At the time of the accident it was believed that the injuries would terminate fatally, according to the attending surgeons. Dynamite blasts set off at the brickyard are believed to have loosened the clay bank.

The Kentucky Face Brick Corporation, with offices in the Second National Bank Building, at Ashland, Ky., which was recently incorporated for \$500,000, has effected an organization with the election of A. L. Russell, of Ironton, O., as president, and A. J. Russell, as secretary. The company will erect a plant for the manufacture of face brick, load bearing and partition tile. The officers of the company had said that they have no definite plans or the building but will equip it with complete machinery for stiff mud process brickmaking.

The Pomona Tile Mfg. Co., Pomona, Cal., recently organized with a capital of \$100,000, has awarded a general contract to H. M. Hanawalt, La Verne, Cal., for the erection of the initial building for its proposed new plant on 5-acre site, lately acquired. The structure will be 100x106 ft., and will be supplemented with a number of other buildings at a later date. It is purposed to install machinery for an initial production of 2,500 sq. ft. of tile per day. Judson F. Clark, Pasadena, Cal., has been elected president and treasurer of the company. Paul C. Boving, formerly engaged in the tile manufacturing business at Trenton, N. J., will be active in

the new organization, as will be, also, George A. Lathrop and Bert L. Cooper.

The Columbus Brick and Tile Co. has acquired 240 acres of land at Columbus, Ga., and will develop it in connection with its plant.

David H. Kirkland and associates are planning to establish a plant at Raymond, Ga., for the manufacture of building brick, fire brick, piping, flues, flower pots and the like.

The Clay Products Co., Jewettville, N. Y., has tentative plans under consideration for the rebuilding of the portion of its plant destroyed by fire, Oct. 1, with loss estimated at close to \$70,000, including equipment.

The work of making brick at the plant of the Table Rock Brick Plant, at Table Rock, Neb., has been resumed after a three weeks' shutdown, caused by the breaking of a heavy shafting. The plant could not be operated until a new shaft had been made by Hadfield-Penfield Steel Co., Bucyrus, Ohio.

The Savage Fire Brick Co., Johnstown, Pa., has selected a site at Meyersdale, Pa., and has tentative plans for the erection of a plant to cost approximately \$65,000. The main structure will be one-story, 75x300 ft., with a number of smaller buildings adjoining. F. W. Minch, Johnstown, is secretary and treasurer, in charge.

The Gadsden Clay Products Co., of Gadsden, Ala., is making some important improvements at its plant, Gordon Hood, the manager, has announced, and is just completing a dry kiln with a capacity of 36,000 bricks a day. The company also will build two round, down-draft kilns for burning brick and will install a brickmaking machine and other equipment.

The Fraser Brick Co., of Stamford, Tex., of which J. H. Payne of the Central Bank Building, in Dallas, Tex., is the active vice-president, has leased the West Texas Tile and Brick Co. plant at Stamford and will operate. The company will make only a few minor changes at the present. During the next year, however, the concern expects to add a number of additional kilns.

Workmen at the plant of the Edwards Brick Co., at Columbia, Mo., recently answering cries for help, found Leo Sandifer, an employe of the company, hanging head down, with one foot caught between a pulley and belt. Instead of using a stick to pry off the running belt he used his foot and the foot was taken into the machinery. His leg was broken and he was taken to a hospital for treatment.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., manufacturer of sanitary ware, is having plans prepared for the construction of a new building at its branch plant at Sixth and Shipp Streets, Louisville, Ky., to be equipped for enameling service. It will be 65x100 ft., and is estimated to cost approximately \$75,000. Work is now under way on another structure at the plant for general increase in production, to cost about \$100,000, with equipment.

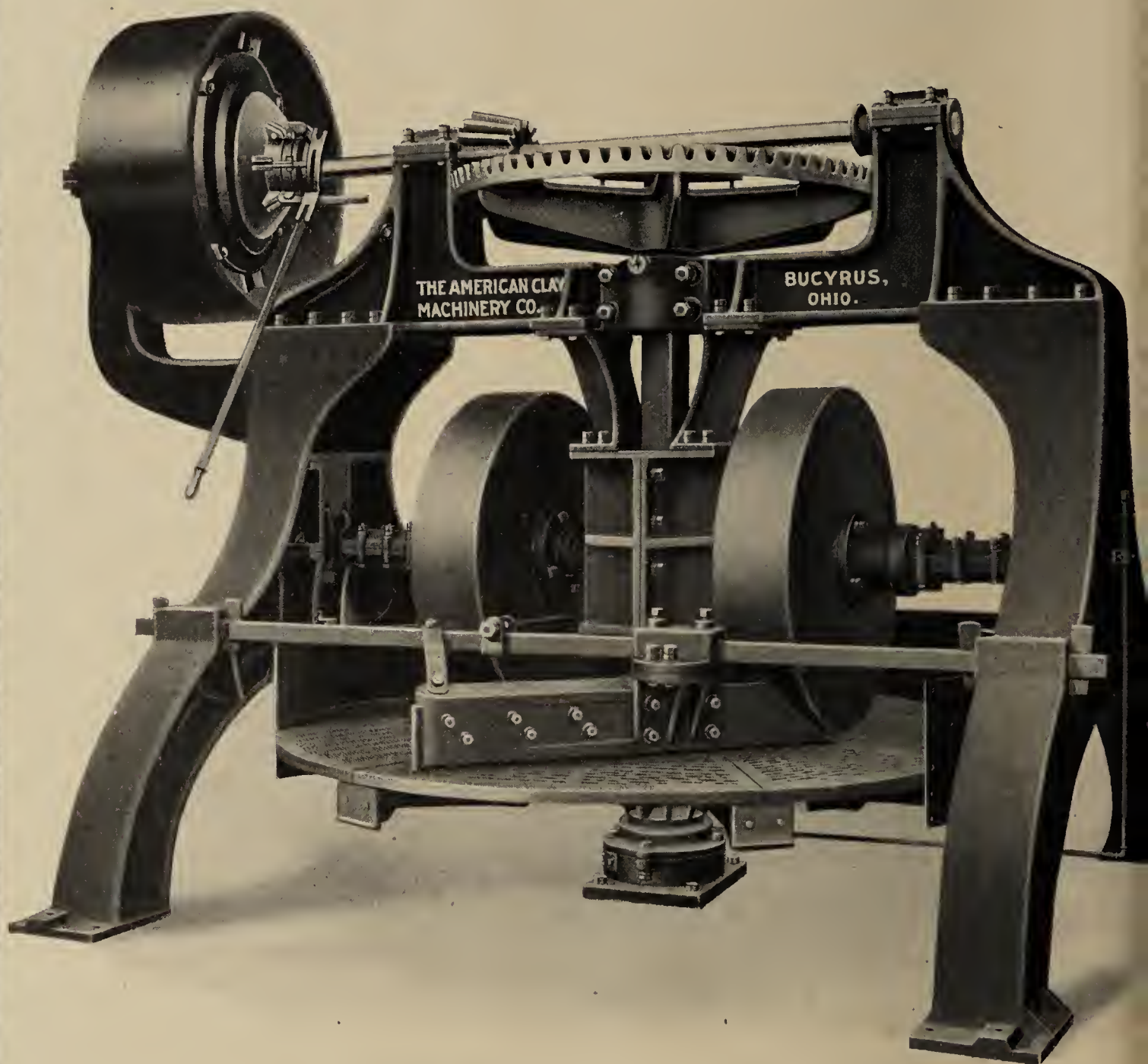
W. R. Renouf, for the past year in charge of sales of the Niloak Pottery Co., of Benton, Ark., has been made general manager of the concern and early in October plans to remove his family to Benton. Mr. Renouf has arranged to maintain an exhibit at the Ft. Pitt Hotel, Pittsburgh, Pa., during January. The demonstration of the making of this ware, which was held in the Wannamaker store at Philadelphia, is to be moved to the New York Store in December.

H. S. Schuessler, who has been treasurer of the A. P. Green Fire Brick Co., at Mexico, for seven years, has resigned the place to become secretary and treasurer of the Standard Car Equipment Co., of St. Louis. He took over his new duties the first of October. While in Mexico, Schuessler had been an active member of the Board of Directors of the

(Continued on Page 386)



PRODUCERS

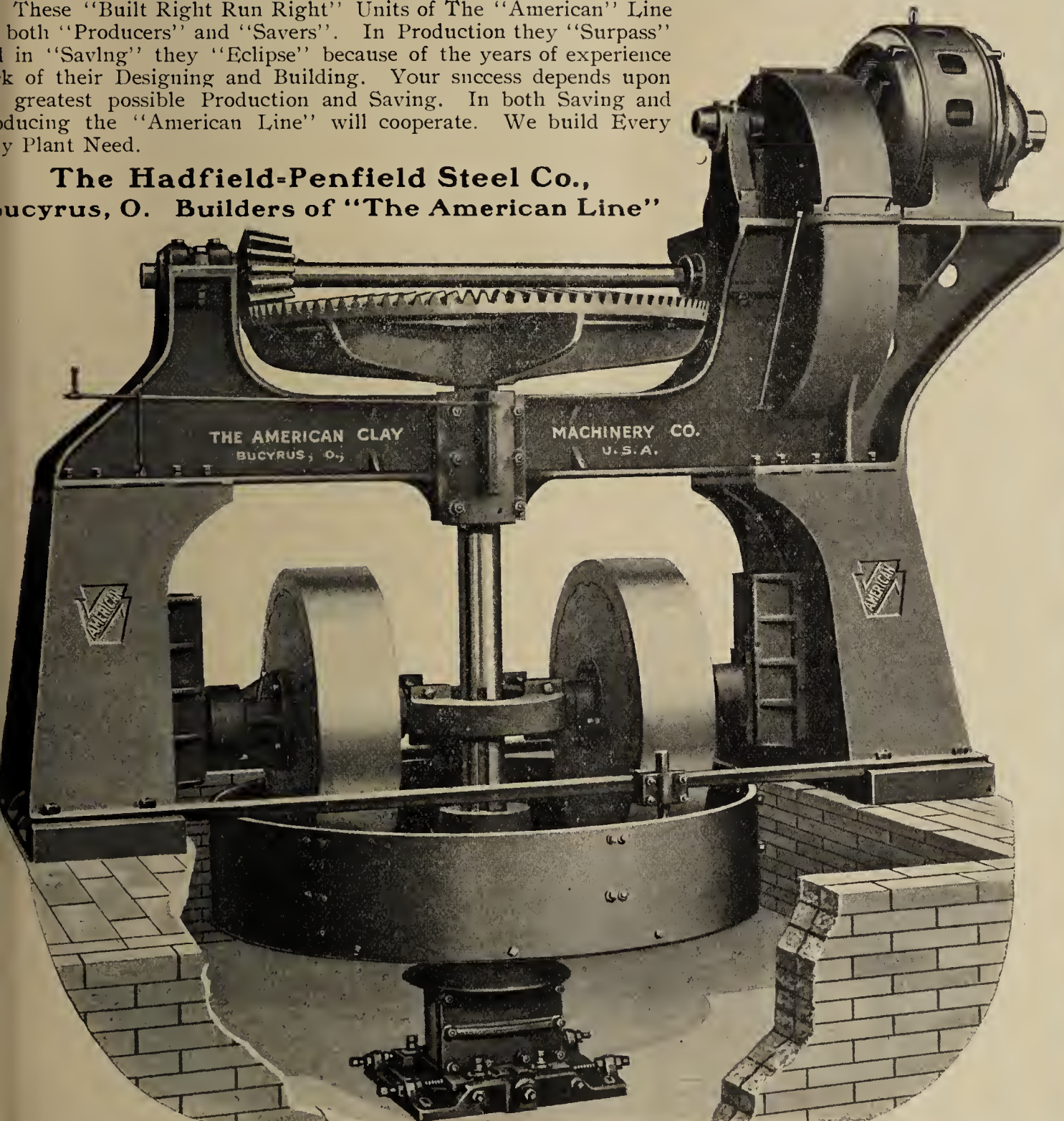


American Standard Nine Foot Dry Pan
The Hadfield-Penfield Steel Co., Bucyrus, Ohio

AND SAVERS

These "Built Right Run Right" Units of The "American" Line both "Producers" and "Savers". In Production they "Surpass" and in "Savlng" they "Eclipse" because of the years of experience and skill of their Designing and Building. Your success depends upon the greatest possible Production and Saving. In both Saving and Producing the "American Line" will cooperate. We build Every Unit to Meet Every Plant Need.

The Hadfield-Penfield Steel Co.,
Bucyrus, O. Builders of "The American Line"



AMERICAN No. 335 WET PAN

EDITORIAL NOTES AND CLIPPINGS.

(Continued from page 383.)

Chamber of Commerce, secretary of the Kiwanis Club and was a leader in other civic movements of the city.

G. A. Dudley, B. F. Miller and Geo. C. Mead have chartered the Parkers Clay Products Corp., Parkersburg, W. Va., to manufacture various clay articles.

The plant of Easton Updyke, Charlottesville, Va., have been purchased by Price Yancey, who will remodel the entire plant putting in modern machinery and appliances.

The Buckeye Tile Company's new ceramic tile plant at Chillicothe, Ohio, is now ready for operation on a small scale, with the expectation of enlarging gradually as business justifies.

The Tri-county Brick Co. has been organized and incorporated to manufacture brick at Rossville, Ohio. W. R. Crowley, C. F. Kelly, O. K. Parret, H. D. Bergin and Arthur L. Rowe are interested.

The mining of fire brick clay at New Florence, Mo., is assuming large proportions. The New Florence Brick Company uses a large amount and quite a bit of clay also is being shipped to the A. P. Green Fire Brick Company at Mexico.

Two hundred and fifty members of the office, sales, warehouse, yard and plant forces of the Cleveland Builders Supply & Brick Company, Cleveland, Ohio, celebrated the company's thirty-second anniversary with an outing at the Cleveland Yacht Club, September 15. The afternoon was devoted to field sports and the evening to dancing.

Reorganization of the Clay Products Company, of Brazil, Ind., in a manner that will be acceptable to Bert McBride, the receiver, is being attempted by John S. Rawley, an attorney. The Clay Products Company is one of the subsidiaries of the R. L. Dollings Company of Indiana, and was placed in charge of McBride, along with the Indiana Dollings Companies.

The plant of the Savage Fire Brick Company, at Keystone Junction, on the Pittsburgh division of the Baltimore and Ohio Railroad, 35 miles north of Cumberland, Md., destroyed by fire 13 years ago, is to be rebuilt and the plants of the company at Hyndman and Williams are to be enlarged. All three plants are within a 20-mile radius. It is the intention to operate the Keystone plant on a much larger scale than before it was destroyed. Its capacity is to be increased to 60,000 bricks per day, and the three plants are to have a combined capacity of 160,000 bricks per day.

The Shenango Pottery Co., New Castle, Pa., is pushing construction on new buildings at its local plant and plans to have a number of structures, with new kilns, ready for service at an early date. A total of 25 kilns will be available on the completion of the present expansion program, making the plant, it is said, the largest in the country devoted exclusively to the production of hotel chinaware. A total working force of close to 600 persons is now being employed, and this number will be increased at an early date.

W. G. Bush & Co. report brick manufacturing active at Nashville, Tenn., with the demand for both common and face brick very strong. No change in prices have been made recently, nor are any contemplated. The Nashville manufacturers are able to care for the local requirements for both common and face brick and in addition ship ten to fifteen cars per day to territory trade. Outlook for fall business is extremely good. There are a large number of new big jobs coming up which will require many million brick. Growing demand for both common and face brick is shown through the fact that September, which was recognized to be a dull

month, was a banner month, as far as shipments and delivery of brick were concerned.

W. C. Carl has purchased the old brickyard of Conrad Auffenberg, at St. Charles, Mo.

The Buckeye Shale Brick Co., of Wickliffe, Ohio, has been incorporated by Jean B. Clyde, Ralph W. Edwards, Patrick D. Collins and A. K. Strong.

A deposit of clay on the land of A. Jackson, at Jasper, Ala., will be developed, a company having been formed to erect a plant for the manufacture of brick, to be ready for operation by early spring.

Colonial Clay Products Company, of Bridgewater, Pa., has been formed with a capitalization of \$125,000. They have obtained a charter to operate the old Brady's Run plant of the Pennsylvania Clay Company.

The Fraser Brick Company, of Dallas, Texas, has taken over the Stamford Brick Company plant at Stamford and will completely rehabilitate and greatly augment its capacity, it became known here today. The Fraser Company owns plants in Athens, Dallas, New Braunfels and Stamford. Officials of the company announced that the Stamford plant will furnish its West Texas territory.

MOVED INTO NEW FACTORY.

THE HARRINGTON & KING PERFORATING CO., Chicago, Ill., manufacturers and perforators of all metals for milling and mining machinery, announce they have moved into their new factory at 5654 Fillmore Street. The new factory is complete with the latest and most modern equipment to enable the company to take care of their growing trade.

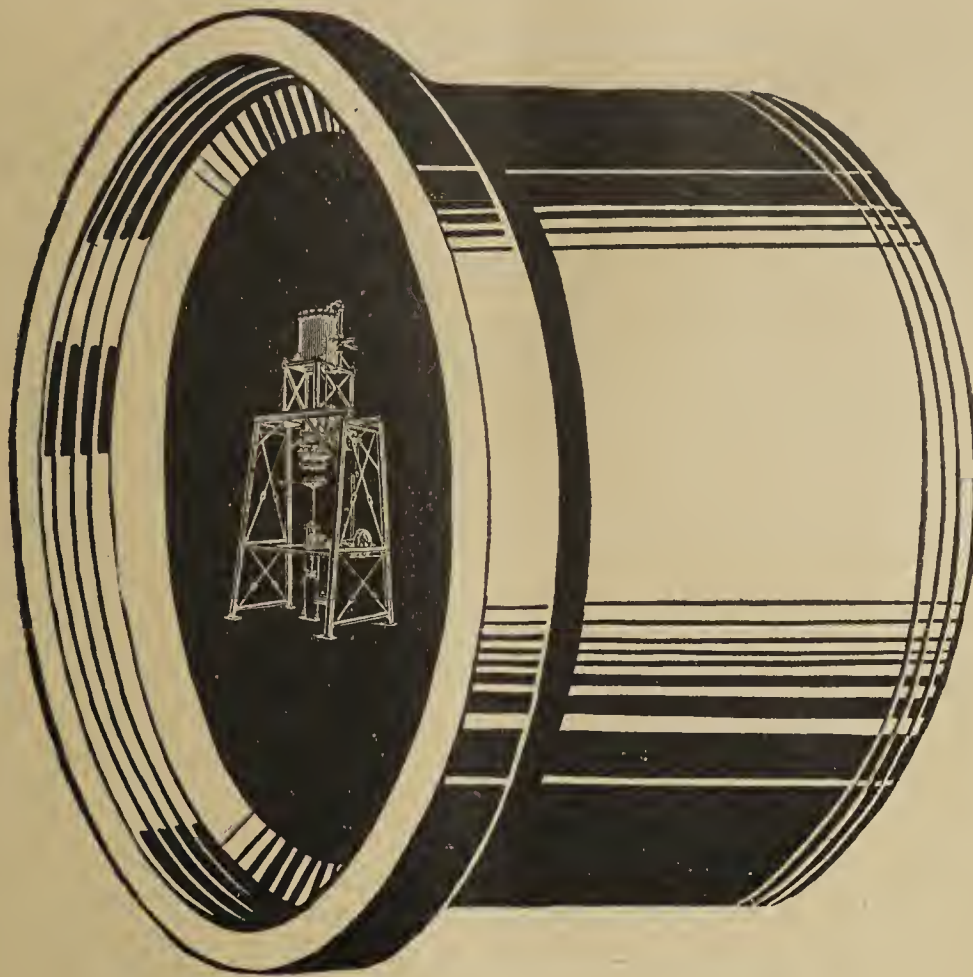
NEW EQUIPMENT FOR COAL MINE.

JOHN H. JONES, president of the Bertha-Consumers Company of Pittsburgh, Pa., accompanied by his son, Marshall J. H. Jones, chairman of the Mines Committee, spent a week recently visiting the Elsie Mines of the Company in the Hazard No. 4 District of Kentucky. The Bertha-Consumers Company has just placed three hundred new fifty-five ton, two steel hopper railroad cars at its Elsie Mines, Elsiecoal, Ky., on the Louisville and Nashville Railroad. New shaker screen equipment has been installed at these mines and a number of new houses have been completed to take care of an enlarged working personnel.

REORGANIZATION OF THE MUELLER COMPANY.

THE MUELLER MACHINE CO., Trenton, N. J., has announced that the rapid growth of the company's activities has necessitated a strengthening of its executive and plant staff. Beginning September 1, C. H. Rassmussen became secretary and general manager and George R. Martin was added to the board of directors. Mr. Rassmussen has been associated with the C. Pardee Works for eight years and with the Perth Amboy Tile Works for ten, and so is eminently qualified for the work he has taken up with the Mueller Company. The new arrangement will permit Mr. Hilmar Mueller, president of the company, to devote more attention to the production end of the business, and this, with the strengthening of the financial and operating departments will, Mr. Mueller feels sure, result in a marked improvement in every branch of the service.

What has become of the old-fashioned man who had some doubts in his mind about motor trucks proving practical in the hauling and delivery of brick and other clay products?



**As surely as day follows night
a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.



ALTHOUGH NEW BUSINESS is not of the volume satisfactory to officials of the concern, the Metropolitan Paving Brick Company of Canton, among the largest makers of paving brick in this section of the country, are operating their plants to capacity. One of the officials said recently: "We are not getting the new business we would like to have on our books but orders have been coming in fairly well in recent weeks." Brick shipments from the Canton plants of this concern are going forward on schedule and no car trouble is being encountered, officials of the company said. The car situation has adjusted itself in recent weeks and all the cars needed are being delivered to the plants on short notice. It will probably be early in December before production schedules will be reduced to a minimum. Prospects for a banner spring year are ahead.

Paving block for road construction is the principal product of this concern and ideal summer weather of late has made rapid progress on several big paving projects in this section possible. There is no change in prices and none are anticipated for some time to come, it was learned this week.

Sufficient orders are on hand to insure steady operation of plants until the first of the year.

The Bonnet Company, of Canton, makers of claymaking machinery, and one of the most widely known firms engaged in this line of work, reports that the year drawing to a close will be the most active in the history of the concern. "We have been working steadily all this year and in some instances overtime work was necessary," said an official of the company.

The Bonnot Company has shipped the largest amount of clayworking machinery to points throughout the United States, in the past eight months at any time in its history.

Shipments have been made the past two weeks to new plants in Indiana and to a number of small plants being built in the Pittsburgh district. Sales continue brisk and there is every indication that this concern will maintain maximum capacity production throughout the entire winter. The pulverizing coal department, making machinery for pulverizing coal, also is reported to be turning out heavy equipment and sales have been more than satisfactory in 1923.

The production of brick and allied building materials is now at its peak in and around Canton. This includes straight building brick, jumbo tile, partition block foundation tile and paving block. The brick plants here are furnishing large quantities of face brick in shades of red, plum, gray and yellow, as well as autumnal shades secured by blending of bricks in the wall. These bricks are produced in a variety of surfaces, some being made by scoring devices that scratch the surface, giving what is known as the "velvet" surface. Judicious methods of burning produce a variety of colors and surfaces, some being impervious to moisture.

One need not go from the Canton district for beauty and color in brick, and local contractors can get almost any brick they desire made to order. The Canton plants of the Metropolitan Paving Brick Co., Belden Brick Co., Stark Brick Co., Canton Brick & Fireproofing Co., and the Mapelton Clay Products Co. are producing a combined output of 840,000 brick a day or a total of 2,333 cars each month at the rate of 9,000 bricks to the car.

Since the advent of trucks in transportation much of this material is moved directly from the plant to the work under construction, local builders being particularly favored by being able to get brick on the job practically in a few

hours' notice. Firebrick and fireplaces and furnaces also are produced in Canton and one of the leaders in this line is the Columbia Firebrick Co.

Electric power from the Ohio Power Co. is being installed at the Carrollton plant of the Medal Paving Brick Co. Superintendent Howard Hawk says the change over to the new power will be made in a few days. The plant is now making 32,000 bricks daily at its local plant.

Edwin M. Ransbottom, 55, vice president and general superintendent of the Ransbottom Brothers Pottery Co., died at his home in Zanesville, September 16. He was born in Perry County, but had spent practically his entire life in Roseville, O. He was a pioneer in modern pottery manufacture and has been a chief factor in the success of the mammoth pottery interests here. Surviving are his widow and one daughter.

One thousand carloads of brick were shipped from the state operated brick plant, at Junction City, during the fiscal year ending June 30, according to the annual report of T. A. Young, superintendent. During the year the plant turned out 8,181,854 brick or an increase of 1,629,652 over that of the previous year. The present maximum production of the plant is 55,000 brick daily.

Receipts for the sale of these prison made brick for the year totaled \$159,684.91, including both paving block and building brick.

The total valuation of the plant at the end of the fiscal year as invoiced by the superintendent was \$232,010. Seven new kilns with a capacity of 70,000 brick each have been completed during the year.

The Muskingum Clay and Gravel Co., Zanesville, has been incorporated by C. O. Bolin, Ralph P. Karns, Laura A. Karns and Blanche A. Bolin, all of Columbus, and is capitalized at \$10,000. The new company will develop the sand and gravel banks on the W. H. Bolin farm near Dillon Falls and plans to begin operations at once. C. O. Bolin, one of the incorporators, is a grandson of W. H. Bolin.

E. A. Hasse, Gnadenhutten, has resigned as secretary of the Belden Face Brick Co., Port Washington, effective November 1. He has been associated in this capacity for the past five years. Mr. Hasse plans to devote all his time to a company in Cleveland, of which he is the owner. He will be succeeded by Raymond Bennett, of Canton, an accountant in his department.

The General Fireproofing Co., Youngstown, through President W. H. Foster, states that business is picking up and the outlook for good business through the fall is promising. He also states that the improvement is in the metal furniture and fireproofing departments of the company. Inquiry is said to be well distributed among the various sections of the country.

BUCKEYE.

Perforated Metal Screens for all Purposes



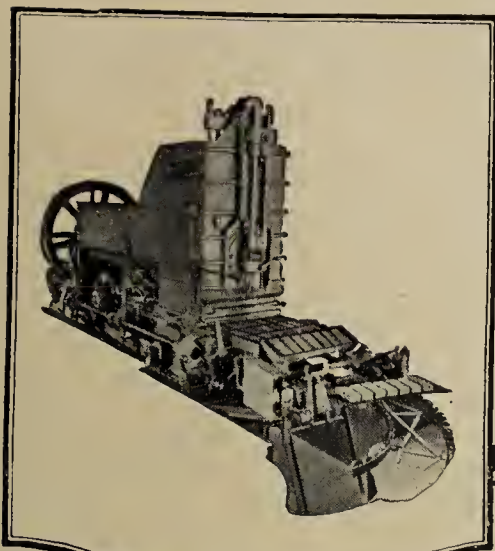
Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Trust Bldg.

Hazleton, Pa., Office
705 Markle Bank Bldg.



More Buildings to Be Built Better Brick to Build Them

As the volume of building construction grows, it behooves the Brick Manufacturer not only to find ways to increase the use of his Brick but to stabilize the use of all Brick.

* * *

Lancaster has been rendering a broad and practical service by advertising direct to the Architect and the Builder to specify and use AutoBrik as made by the AutoBrik Machine. Records reported by enthusiastic AutoBrik users prove that AutoBrik are being used more and for different building purposes. The superior qualities of AutoBrik are demonstrated by the fact that in many yards AutoBrik will bring from one to three dollars more a thousand than just brick.

Lancaster Brick Engineers will be glad to place before interested Plant Managers sound brickmaking advice on how to increase production and sales and lower operating costs.

Lancaster Iron Works, Inc., Lancaster, Penna.

Brick Machinery Department James P. Martin, Manager

Specialists in completely equipping
Building Brick and Fire Brick
Plants for the manufacture of Brick
by the Soft Mud Process.

AutoBrik Machine

STANDARDIZED COSTS FOR CLAYWORKERS.

(Continued from Page 347)

an increase least, and lowers the rate when business is good and demand is high and it is easier to get one's price than at any other time. Furthermore, this method presupposes that all years are normal and that the failure to earn sufficient burden one month will be made up by the succeeding month.

We have already pointed out that business conditions in this country move in a cycle of depression and boom time, crest and trough. Consequently, this method would be very injurious at a time when business is poor, and because the rate is automatically reduced it would not be particularly beneficial when business is good.

The Normal Rate.

A much better way to meet this situation, to my mind, would be to determine a normal rate or burden based on as many years' experience as one has at his command. This rate would be arrived at in the following manner: Suppose a clayworker has been keeping careful record of his burden for the past five years, and that the burden for the five years ran about as follows:

100 per cent the first year,
90 per cent the second year,
85 per cent the third year,
80 per cent the fourth year,
75 per cent the fifth year.

This makes an average rate of 86 per cent, which constitutes the normal overhead for this plant. In the following year he strikes a period of business depression and his burden mounts to 100 per cent. He adds the 100 per cent to the sum of the five years previous and divides by six, which gives him an average rate of 88 per cent.

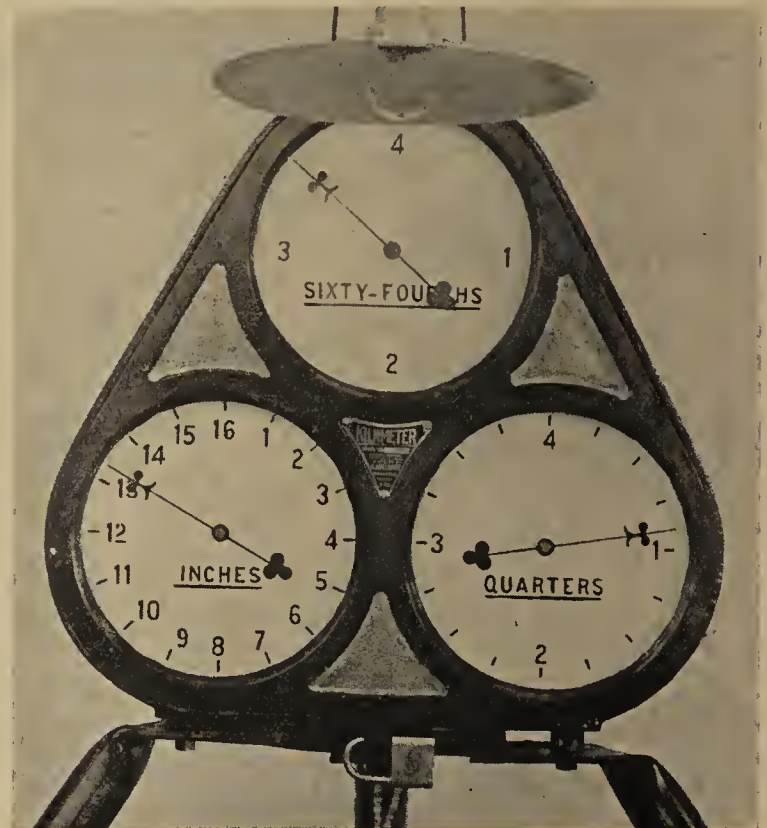
If 88 per cent represents his normal burden, then he would charge at this rate at all times, no matter what the condition of business was. Suppose, for example, that his labor cost for the month is \$1,000. At 88 per cent his burden earnings for this month are \$880. But the actual burden for the month is \$1,320. This leaves a deficit of \$440 for this month. This \$440 should not be added to the budget estimate for the succeeding month but should be carried to a suspense account known as the **Under or Over Absorbed Burden Account** and entered on the credit side, which indicates that \$440 has been paid, but that to date nothing has come in to balance this sum.

As business conditions improve, we will assume that his labor costs for the next month amount to \$2,000. At 88 per cent he has now earned \$1,760 for the month, which is \$440 more than he needs, his burden charges being \$1,320. This \$440 is carried to the **Over or Under Absorbed Burden Account** and entered on the debit side to indicate the earned burden in excess of actual expenses. The \$440 excess will offset the \$440 deficit.

Of course, it is perfectly obvious that every lean month will not be immediately followed by a fat one during which the excess earning counter-balances the deficit. But, over any given period of time of one year or more, this will be true. By this method the charges against the plant are reduced when business is low and they are automatically increased when business is good. A careful consideration of this method and intelligent application will prove that it is the only satisfactory way in which this problem of unearned burden can be met.

(To be Continued.)

NO EXCUSE FOR OVERBURNED PRODUCT NOW

**THE KILNMETER**

(Patents Pending)

For the first time since the world began, you are able to observe at any moment, day or night, the actual vertical settlement of the kiln charge magnified over five hundred to one.

The moving micro-hand travelling visibly, like the second hand of a watch, keeps you apprised at all times of the actual performance of your product under fire, and affords data that enables you to correct all your firing factors, fuel feed, draft, firing term, cleaning period to correctly meet your particular yard condition.

Let us tell you more about this remarkable time, labor and fuel saving device, the most beneficial clay works invention of the century.

Write today to

THE KILNMETER

436 W. Washington St., Indianapolis, Ind., U. S. A.

Inquiry will not obligate you in any way.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders

Des Moines, Iowa

A PRISON CORRESPONDENCE SCHOOL.

WE ARE INFORMED that there has been founded at Columbus, Ohio, with headquarters in the Central Bank Building, an organization known as the National Intra-Wall Institute, a non-profit educational institution chartered for the declared purpose of helping to educate prison inmates through a correspondence course of study. The personnel of the new organization includes T. O. Reed, Chaplain of the Ohio Penitentiary, and Butler R. Storke, who was pardoned and given his release from the Ohio Penitentiary by Governor Donahey because of his good work in developing systematic studies among prison inmates, and so that he might be free to undertake the work of publishing specific instructions to inmates while they are in prison and helps to the right viewpoint and the right start in life when they come out. He has the co-operation of the Chaplain in this, and the approval of business men of Columbus, who have promised to assist in the effort, among them being Robert H. Schryver, president of the Citizens Trust and Saving Bank, of Columbus, who is acting as treasurer of the Institute, which is open to voluntary contributions to assist in the good work.

AMERICAN CONSTRUCTION COUNCIL EXTENDING ITS ACTIVITIES.

AT THE LAST MEETING of the Executive Committee of the American Construction Council, President Franklin D. Roosevelt, through the committee, announced the creation of additional executive positions to expedite the administration of the expanding of the Council. Mr. D. Knickerbacker Boyd, President of the Philadelphia Building Congress, was named Executive Vice-President of the Council and at the same time Dwight L. Hoopingarner, formerly Executive Manager of the Cleveland Building Trades Employers' Association, was appointed the Council's Executive Secretary. Joseph H. Alexander, Vice-President of the Cleveland Railway Company and John E. Lloyd, President of the Wm. M. Lloyd Company of Philadelphia, have accepted vice-presidencies in the Council. The foregoing are in addition to the Council's previously existing officers.

Announcement of important new committees will be made shortly.

The efforts of the Council are being intensively directed first on several of the most urgent problems confronting the construction industry, such as promotion of and co-operation with local building congresses, a national survey of apprenticeship needs and conditions of labor supply, promotion of the stability of employment and reduction of unemployment, comprehensive steps toward the determination of the causes and the elimination of waste in all its phases throughout the industry, a general educational program as to the problems of the industry and its development, and the promotion of the concept of construction activities as a great American industry.

Activities being carried on in these fields by other agencies will receive proper recognition by the Council at all times, and co-operation with the appropriate existing agencies will be established.

The Council recently moved into new quarters in the National Association Building, 28 West 44th Street, New York City.

Cotton picking has been cutting into the labor supply in the South country lately, and it is probably causing many of those colored brethren who migrated north earlier in the year to sing with a longing heart that good old song, "I Wish I Was in Dixie."

Clay Glazes and Enamels

By Henry R. Griffen

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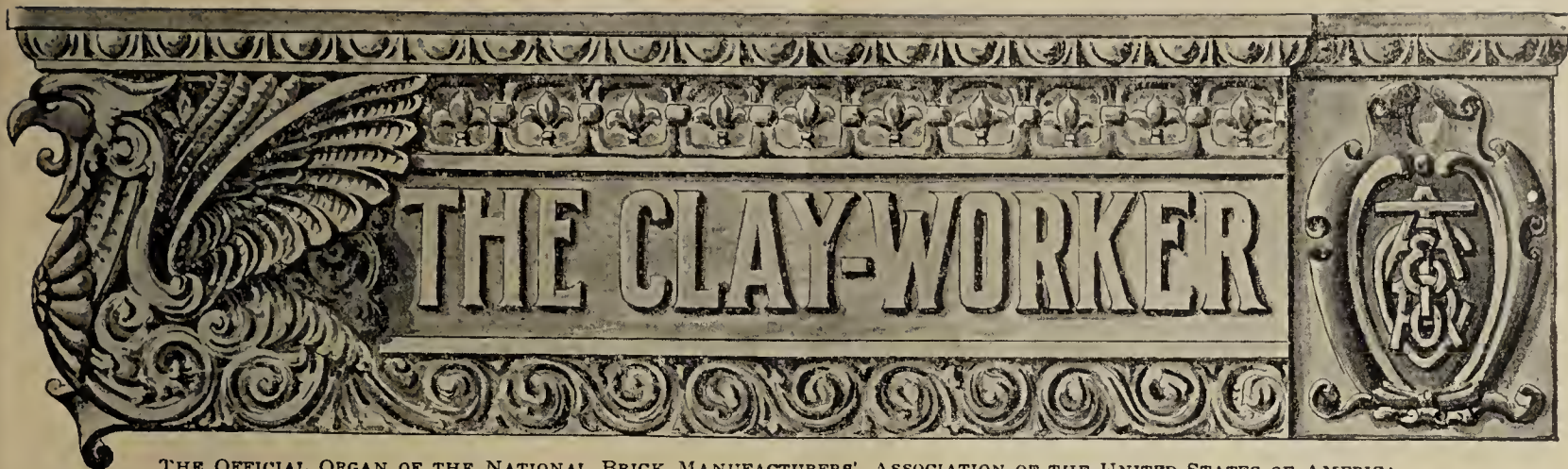
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Washington, D. C.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 80

INDIANAPOLIS, NOVEMBER, 1923.

No 5.

COMMON BRICK SHOWS CLASS

Examples of Attractive and Artistic Homes Built of Common Brick By Some of the Leading Architects of Chicago, Who Find in Common Brick a Means of Expressing Beauty in Home Architecture. ❖ ❖ ❖ ❖ ❖

N ECESSITY IS THE mother of invention. A little water brought in contact with sweet sands turns a desert into a productive area. And now under the intensive regard of architects, builders and brick men, striving to cope with the problem of advancing construction costs, the common building brick, long known for its utility—and kept in the

produced and, therefore, for these days, comparatively cheap, the face brick has found in the humble clay product of the olden days a real rival when it comes to exteriors. Quite possibly the wall of stucco on hollow tile, which recently has been in much favor for medium priced homes, has found in this new use of common brick even a greater rival than has



Artistic Common Brick Home of Architect S. S. Beman, Winnetka, Ill.

background as fit to be devoted only to strictly utilitarian uses, now comes to the front as the outside coat and finish of some of our very finest and most modern homes.

The attractive results which have been produced under the direction of leading architects of this vicinity, make it certain that, especially in localities like that about Chicago, where an excellent grade of common brick are plentifully

the face brick. A man who was about to build recently got figures on both types of construction and found that in the masonry item alone he would make a saving of about \$1,500 if he used the common brick wall instead of the stucco on tile. The saving as between the use of common and face brick is measured by the difference between the market price of common brick in Chicago of \$12 a thousand and the pre-

vailing prices of face brick, which run roughly, from \$30 to \$40 a thousand.

The use of common brick in this manner is not limited to sporadic examples by any means, nor to the smaller and cheaper kind of dwellings. While there are houses of this type now scattered over many parts of Chicago, the greatest evidence of this development has been in the rather exclusive residence territory of the northshore. In the last year and a half, in the neighborhood of 200 exquisite homes have been erected in this territory using the plain, old-fashioned, every-day ordinary building brick in the outside walls, but so assembled and handled that on one would ever think of comparing these exteriors with the averaged unattractive wall of a factory or the alley side of a flat building.

How has it been possible to employ this plain medium so that it is sought for exterior use not only by those seeking cheaper building material, but also in large measure by those who could afford to build in any material they might choose?

While this question is readily answered by the architects and builders and illustrated by them through photographs, the seeker for truth will get his best response by personally taking a trip through a part of the northshore territory, picking out at least the more noteworthy of these extremely modern dwellings, and letting his own eyes determine for him.

The simplest method of getting an unusual effect instead of the plainness of the ordinary common brick wall is that of leaving the mortar joints "unstruck." It requires a slightly more generous use of mortar than some bricklayers have been known on occasion to use in these unpraiseworthy days, but no more than an old-style conscientious brick mason will slap down between courses. The next bricks are pressed into place and the mortar is allowed to harden just as it oozes out from the joint, no "overflow" or "splashmarks" being removed by the trowel. The home of R. S. Ozanna, 2510 Lincoln avenue, Evanston, Ill., planned by Clark and Walcott, architects, illustrates this style in "common builders."

Another device calls for laying the brick evenly and smoothly, oftentimes the ideal hollow wall type of masonry which results in the broadest possible courses, being used. This wall is then stained. White is the shade thus far most commonly used, reproducing the effect found in the quaint old English cottages, although tans and other modest shades are used also. In some cases the scale is applied so that it will scale or fade unevenly and in spots. This gives the appearance of weathering and age familiar in ancient buildings of the old world and the older parts of this country. The quaint, simple, but exceedingly attractive, dwelling designed by Fugard and Knapp, architects, for E. L. Harris, 334 Forest avenue, Winnetka, Ill., is of this type.

A third method is known as "skintling," and consists in laying some of the bricks in each course with corners jutting out from the wall at an angle, and a fourth method called "staggering" is achieved by putting the bricks into the wall to use a slang term—"any old way," or as one brick man put it—"give them a kick and let them lie."

Carefully worked out patterns for laying the brick with well varied types of courses and even variation within the

courses, also are used in getting excellent results out of this new exterior material. Colored mortar for the joints also helps to give color and life to the wall. Of course, these latter schemes may be, and are worked in conjunction with any of the others.

The rough wall textures produced by staggering, skintling and unstruck joints, and also the mottled effect produced by irregular staining, is admirably adapted to the Spanish, Italian and English cottage style of dwelling which appear to have been the prototypes of many of these northshore homes. The early colonial type of architecture also has been found in harmony with these uses of common brick. Tile roofs, either in conventional red or in greens, browns or variegated colors have been much used and so also have shingle and composition.

One of the most interesting developments in this connection has been the resurrection of brickyard wastes long ago cast away as spoil. In these rough exteriors which just now are rather the vogue it has been found that clinker brick give a touch of roughness and color which can be secured in no other way. This provides a market for about the only



Common Brick Skintled, with Face Brick Trim. Home of Mrs. Enos Barton, Designed by Chatton & Hammond, Architects.

by-product of the brick-kiln unused up to this time, and interestingly enough, while in the first instance or two of its use, it was possible to get this material practically for the cost of carting it away from the dump of the brick plant, now that there is some demand for it, the cost has become slightly higher than that of first class common brick where the "clinkers" have to be taken from the dump, because of the necessity for extra handling, and that by hand instead of machine. The residence of Paul Gougelmann, 855 Sheridan Road, Glencoe, another of Mr. Allen's architectural products, illustrates the use of clinker brick in its attractive walls.

To show that they are not selling to their clients anything which they would not want to use for themselves, two of Chicago's leading architects—S. S. Beman and Alfred Granger—have used common brick exteriors in their new homes, respectively in Winnetka and Lake Forest. The former illustrates the exceedingly rough staggered wall, the staggered brick, however, being in alternate courses. The walls of the

latter in the main are smoothly laid with the outjutting brick in more regular pattern, but giving to the wall great relief from flatness and much individuality.

One of the most pretentious homes of this type is that erected for Mrs. Enos Barton at 978 Euclid avenue, Winnetka, after plans prepared by Chatten and Hammond, architects. Here the skintled roughness of the walls is relieved effectively by the trim which is of face brick.

For the loan of the pictures connected with this article and for help in securing the data, the writer is indebted to the Illinois Brick Company and personally to Mr. W. H. Schlake, sales manager of that company. This company, which is the largest producer of common brick in the Chicago territory, together with the National Brick Company and the Lutter Brick Company, supply most of the common brick used in the north shore homes. In connection with the growing use of common brick in home building a prominent architect was recently quoted in the Chicago Daily News as saying: "Five years ago I could not induce a client to consider a common brick house. It was not until a year or so



Home of E. L. Harris, Winnetka, Ill., an "Ideal" Hollow Wall of Common Brick, Stained White to Give Effect of Age.
Fugard & Knapp, Architects.

ago that the possibilities of the material were appreciated by home builders. We architects who have used it recognize it as an inexpensive medium for achieving distinctive and artistic effects, and it seemed fitting that it should be used in Chicago, which is the greatest producing center for common brick in the country. It is an architectural canon to utilize native materials wherever possible."

On this point an attractive volume of architectural prints of common-brick-built homes, prepared by the Chicago Brick Exchange, which includes in addition to the Illinois Brick Company, the Bach Brick Company, the Builders' Brick Company, Alexander Burke's Sons, the Carey Brick Company, the Chicago Brick Company, Labahn Brothers, the Lake View Brick Company, the Lutter Brick Company and the Tuthill Building Material Company, presents the following foreword:

"The pictures show more clearly than mere words can, what beautiful effects can be attained with common brick when carefully and attractively laid. They prove again the contentions of the architects that any native material, when used with skill, produces satisfactory results." —Scrip.

"A NICKLE A BRICK MAKES BUILDING SICK."

UNDER THE ABOVE head and with an opening assertion that the placing of common brick in a wall in a new building costs five cents in Columbus, Ohio, Wood Construction, the official organ of the Ohio Retail Lumber Dealers' Association, published at Xenia, says this is how it is figured:

"Common brick cost contractors \$18 per 1,000. Mortar to lay the brick costs between \$5 and \$6 for each 1,000. The bricklayer's helper gets \$5 a day. The bricklayer himself gets between \$11 and \$13.50 a day, depending upon how much bonus the contractor has to pay to get him to work.

"This would make the cost of laying 1,000 bricks, supposing the bricklayer handled that number a day, at the lowest estimate, \$13, and at the highest, \$42.50.

"However, contractors say, the average bricklayer nowadays places only 600 brick a day. It costs, therefore, to lay 1,000 brick somewhere between \$49.66 and \$53.08, or about 5 cents each.

"When face brick are being laid, upon which the workman must exercise care, the cost is nearly doubled.

"Before the war, contractors assert, it was nothing uncommon for bricklayers to place between 1,500 and 2,000 brick a day. If the same industry were shown by workmen today, they point out, the cost of laying each brick would be cut to between 3 and 3½ cents."

There is further contention that the cost estimates given here do not include the assembling of materials, overhead, waste or contractor's profit. This is given as one reason why building operations in Columbus have slowed up a little. The high wage rate to bricklayers and the bonus sometimes paid to tempt them on to any given job has reached the point of protest and is bringing about some reaction, it is claimed.

It is not the purpose here to enter into a discussion of the merits of these claims, but rather point out that there is protest against the high cost of building, and along with it there is some disposition to do a bit of blame shifting. One class of material men will blame another, the material men lay it on to the skilled worker, and the skilled workers in turn blame it on the material men and so it goes. There is room for some questioning as to whether building costs are any higher now in comparison with average earning capacity than they were ten years ago. So instead of complaints and buck passing what we should have is more investigation into the real facts of the matter, and more effort to keep costs and cost distribution on a proper level and fairly balanced.

PROOF POSITIVE.

Bobbie came home one day with a brand new golf ball.

"Look at the lost ball I found on the links, daddy," he said.

But daddy was suspicious. "Are you sure it was a lost ball son?" he asked.

"Surest thing you know," replied Bobby with conviction "I saw the man and his caddy both looking for it."

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



GENERAL CONFERENCE of manufacturers, distributors and users of hollow building tile was held at the Department of Commerce here on October 19, under the auspices of the Division of Simplified Practice, for the purpose of reaching a definite decision as to weights and sizes to be adopted as the standard of practice for the tile manufacturing industry for one year to begin on January 1, 1924.

Ray M. Hudson, assistant chief of the Division of Simplified Practice, presided at the conference, and gave a brief outline of the economies effected in other industries through the application of simplified practice to their products.

A survey of variety in sizes, dimensions, and weights reported at the preliminary conference of manufacturers held at the Department on June 19, 1923, showed 36 different sizes, each made in a wide variety of weights. A compilation and review of the figures brought out by this survey was made by the Standards Committee of the Hollow Building Tile Association and was used as a basis for adoption at the general conference.

The conference decided to vote on the list submitted by sections, and the discussion opened on the 12x12x12 standard load-bearing wall tile for end construction. It was contended that this size did not permit of combined brick and tile construction for the city of Washington. It was brought out by the tile manufacturers that this size would adequately meet the requirements of any construction, and that its failure to do so in Washington was due to the fact that builders in this vicinity were not using the standard size brick as adopted at the Brick Conference held at the Department of Commerce on June 21, 1923.

Mr. Sturtevant, of the Association, explained to the conference that the last four units of tile as listed under standard partition tile were under a course of tests at the Bureau of Standards, and their findings would determine whether they would be classed as floor tile of standard weights. The remaining groups were voted on and unanimously adopted.

After considerable debate as to tolerance for weights and dimensions, it was unanimously passed that not more than 5 percent tolerance over or under would be allowable for weights, and 3 percent over and under for dimensions covering length, width, and height.

January 1, 1924, was set as the date the recommendation should become effective, and to remain in force for a period of one year from that date.

A standing committee of the conference, consisting of three representatives of manufacturers, three of distributors, and three of consumers, was decided upon as a means of providing a follow-up to insure the adoption of the simplifications embodied in the recommendations of the conference; to effect a greater degree of contact and cooperation between the Department and the industry; and to consider further eliminations or substitutions in the existing varieties of tile. The personnel of this committee will be announced later.

The following list gives in detail the weights, sizes, and types of tile adopted at the conference:

Standard Load-Bearing Wall Tile.		Weight, Lbs.
—End Construction—		
3 $\frac{3}{4}$ x12x12	3 cells	20
6 x12x12	6 cells	30
8 x12x12	6 cells	36
10 x12x12	6 cells	42
12 x12x12	6 cells	48

—Side Construction—

3 $\frac{3}{4}$ x 5 x12	1 cell	9
8 x 5 x12	2 cells	16
8 x 5 x12 ("L" shaped)		16
8 x 6 $\frac{1}{4}$ x12 ("T" shaped)	4 cells	16
8 x 7 $\frac{3}{4}$ x12 (square)	6 cells	24
8 x10 $\frac{1}{4}$ x12 ("H" shaped)	7 cells	32

—Standard Partition Tile—

3x12x12	3 cells	15
4x12x12	3 cells	16
6x12x12	3 cells	22
8x12x12	4 cells	30
10x12x12	4 cells	36
12x12x12	4 cells	40

—Standard Split Furring Tile—

2x12x12	9
---------------	---

—Standard Book Tile—

3x12x18 to 24	18 lbs. per square foot
---------------------	-------------------------

The following participated in the conference: Bevier, P. H.,



Common Brick: Odd Effect of Un-struck Mortar Joints. Residence of R. S. Ozanna, Evanston, Ill. Clark & Walcott, Architects.

Hollow Building Tile Association, Flatiron Bldg., New York city. Brady, Wm. G., 439 Treasury Building, Washington, D. C. Cartwright, Frank C., Division of Building and Housing, Department of Commerce. Dailey, E. W., North Iowa Brick and Tile Co., Mason City, Iowa. Deckman, Chas. G., Medal Paving Brick Co., Cleveland, Ohio. Dixon, C. W., Columbus Brick and Tile Co., Columbus, Ga. Downer, H. C., The Malvern Fire Clay Co., Malvern, Ohio. Ginder, J. W., Federal Specification Board, Treasury Department, Washington, D. C. Graham, Bert J., Denison Interlocking Tile Corp., Guardian Bldg., Cleveland, O. Green, A. L., American Railway Association, Chicago, Ill. Healy, John P., Building Officials' Conference, 108 Municipal Bldg., Washington, D. C. Holden, P. E., assistant manager Fabricated Production Department, United States Chamber of Commerce, Washington, D. C. Juse, Frank

J., Chief Engineer, Hollow Building Tile Assn., Chicago, Ill. Hutton, Jr., Wm., Troy Fireproofing Co., Troy, N. Y. Ingberg, S. H., American Society for Testing Materials, and National Bureau of Standards. Keasbey, H. M., National Fire Proofing Co., Fulton Bldg., Pittsburg, Pa. Peace, T. M., Alfred, N. Y. Rommel, Edward, Consolidated Clay Products Co., Canton, O. Sleeper, J. S., Secretary, Hollow Building Tile Assn., Chicago, Ill. Snow, W. A., American Clay Products Co., 175 Fifth Ave., New York city. Sturtevant, E. R., Hollow Building Tile Assn., Dallas, Texas. Thomas, H. B., National Fire Proofing Co., 949 Broadway, New York City. Wallace, R. G., Hollow Bldg. Tile Assn., Fulton Bldg., Pittsburg, Pa. Whitacre, J. B., Whitacre-Greer Fireproofing Co., Waynesburg, Ohio. Wilson, Wm. E., Mason City Brick and Tile Co., Mason City, Iowa. Wright, Francis H., Hay-Walkerr Brick Co., 52 Vanderbilt Ave., Pittsburg, Pa. Yepsen, V. L., Anness and Potter Fire Clay Co.,



Common Brick: Rough Staggered Common Brick Work in Home Designed for G. B. Winters by James Roy Allen, near Winnetka, Ill.

Woodridge, N. J., and Hudson, R. M., and Colwell, H. R., of the Division of Simplified Practice, Department of Commerce.

It is reported that in the case of the United States vs. Tile Manufacturers' Credit Association the Department of Justice has reached a decision to enjoin the association from collecting certain types of statistical and other information. It would be provided, however, that such association might receive and compile, for transmission to any government agency such information and statistics as such government agency might request as to production, stocks on hand and prices. However, such association would be restrained from distributing information so collected among its members.

In view of the importance of the department's decision as to the collection of statistics and other pertinent trade information as being so vital to legitimate business endeavor, the representatives of the National Association of Manufacturers here have taken up the matter with the Department

of Justice, and have strongly urged that, in the public interest, the decree be modified by the elimination of all reference to government departments, as the collection of information by government departments is properly controlled by statute. It has been further urged upon the department that in the description of permissible activities of trade associations that cost accounting be included, and that the department's decree carry the following paragraph:

"To periodically or otherwise collect and make currently and otherwise available to those interested the facts relating to capital employed, power used, wages and or taxes paid, fuel consumed, machinery employed, and like pertinent trade information, production, sales, shipments, and stocks on hand of tiles and the prices obtained therefor, all of such being a record of accomplished facts."

The National Association of Manufacturers, in further recognition of the public interest, suggested that in addition to the availability of such statistics to those interested, that a prohibition might properly be contained in such decree against the misuse of otherwise legitimate activities and information in furtherance of any agreement or conspiracy to fix prices, limit production, restrict sales, divide territory, or in any manner restrain lawful competition in commerce.

The manufacturers' association pointed out the vital necessity of business information and the serious consequences to the business fabric if the proposed decree against the Tile Manufacturers' Credit Association should be entered in its present form. Such a decree, the association claims, would serve notice upon all trade associations that the Department of Justice regards the collection of statistical and other trade information, because occasionally misused, within the condemnation of existing law and to be prohibited.

The Department of Commerce has issued an interesting bulletin showing the production, sales and stocks on hand of brick on August 31, 1923, with comparative figures for the same date of last year. There are also given the figures for the preceding month, July, 1923. Following are the government's figures:

	July, 1923.	August, 1923.	August, 1922.
Clay fire brick (computed):	1923.	1923.	1922.
Production (thousands)	60,085	62,209	51,828
Shipments (thousands)	57,569	59,456	49,075
Stocks, end of month (thousands)....	166,493	169,325	162,876
New orders (thousands).....	47,659	50,648	52,300
Unfilled orders (thousands).....	84,308	75,500	74,399
Silica brick (computed):			
Production (thousands)	14,499	12,307	9,666
Shipments (thousands)	14,581	12,260	11,687
Stocks, end of month (thousands)....	41,450	41,586	35,743
Face brick (32 identical plants):			
Production (thousands)	25,494	26,786	25,756
Stocks, in sheds and kilns (thous.)..	67,787	60,197	51,080
Unfilled orders (thousands).....	51,826	46,252	41,781
Shipments (thousands)	23,767	24,334	26,361

According to the last report made by the National Paving Brick Manufacturers' Association to the Department of Commerce, production decreased slightly in April, May, June and July, while shipments showed a substantial increase. Following are the official figures:

Paving Brick (No. 1 Quality—				
	April.	May.	June.	July.
Companies reporting, number.....	29	24	25	25
Proportion of industry, percent....	66	67	67	68
Production, thous. of brick.....	33,315	34,382	31,105	30,529
Shipments, thous. of brick.....	23,397	26,209	27,251	27,092
Stocks, end of mo., thou. of brick..	80,170	77,662	80,324	78,835
Orders received, thous. of brick....	24,522	34,475	36,078	23,668
Cancellations, thous. of brick.....	1,028	2,158	574	5,340
Unfilled orders, end of month,				
thous. of brick.....	91,849	90,644	110,120	100,444
Relative production No. 1 and				
No. 2 brick to capacity, percent	77	71	66	83

—ALTHOMAR.

CONSTRUCTION FEATURES OF IMPORTANCE TO CLAY PLANTS.

By T. W. Garve*

Introduction.

A BRICK PLANT is seldom complete in the first instance. It is at all times subject to developments. There is as a rule, no definite unit. The builders start with a definite proposal as to capacity but the several processes do not work out as expected: they are not in balance. The balancing work begins and seems never to end. Whatever the explanations, construction work is an annual feature in most clayworking plants, and it is the purpose of this paper to discuss such constructional problems.

General Recommendations.

The first step in any improvement should be plans and specifications. Too many clayworkers plan improvements by looking over the situation, and proceeding without further consideration, only to find later that they have made a number of blunders which would not have occurred if the project had been worked out on paper and fully considered before

For a new plant or large extension, it would be advisable to have a construction engineer who will work in harmony with the management and the construction foreman but who will have vision and nerve enough to go ahead on his own responsibility. The construction engineer should be careful yet firm and quick in his decisions and actions. He must be an inspiration to the men. He should demand work for pay without being a driver.

On large jobs, it is desirable to use time slips of a special color and especially designed. They should be handed to the construction engineer every night before delivering them to the time keeper. Different sections of the work such as different buildings or different classes of work like excavating, concreting, carpentry, bricklaying, etc., should have special numbers marked on the time slips. This will enable the engineer to see whether each job is progressing within the estimated cost. It is important that the engineer in charge should be feeling the pulse of the work at all times, and for this the time slips are excellent.

The tool, office and lunch shanties for the construction gang can be portable or collapsible buildings, the roof, floor, and four sides of which are complete and separate units, bolted together or simply hooked together. It will permit of

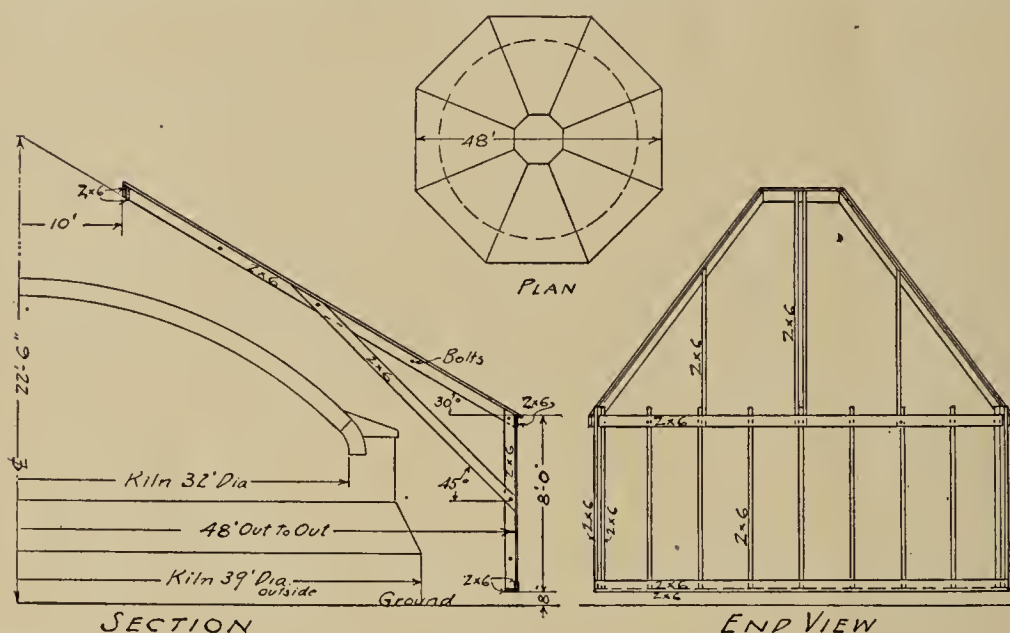
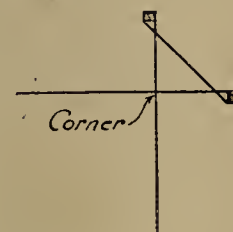


Fig. 1 Left
Fig. 2 Above
Fig. 3 Right



starting the work. The blunders may temporarily be overcome, but hardly corrected, by some makeshift which will be a continual source of annoyance and expense.

A careful estimate of the cost of the improvements should be made and covered by an appropriation.

Each clayworker should have a plan of his plant, in tracing, from which blue prints can be taken and used for study and submission to engineers, machinery concerns, and others for advice in every proposed improvement. These should show not only property and buildings to scale but also all machinery with shafting and drives and all the equipment together with notes on sizes and make. Also building posts or columns should be indicated and all wiring, piping, and drainage. The size of all piping and drains should be marked and also all valves and intakes. Such a drawing should be kept up to date. Such a print is the best record available for checking up the equipment, for locating leaks or stops, and for getting necessary and accurate distances and clearances.

It is advisable to do construction work, if at all possible, during times of depression. It will insure lower material and labor costs, and will receive closer attention and more prompt shipments of materials, and will cause less interference with regular production.

*Reprint from the September issue of The Journal of The American Ceramic Society.

easier transportation of the buildings around the works saving time and labor, and the salvage will be greater at the end of the job.

The tractor is a most helpful and useful contrivance for almost any kind of construction work. We have successfully done rooting, plowing and scooping with a tractor and two Maney scrapers; have driven the saw mill, the cross cut saw, the machinery of the plant; have hoisted building timber, steel, and other material; tilted up concrete chuting tower; pulled up complete roof trusses; unloaded and moved heavy machinery and equipment; moved railroad cars, shanties, logs, etc.

Another modern contrivance is a Ford truck with a flat bottom that can be tilted by its own power. It can be used for excavating or filling purposes, for hauling and placing sand, gravel, stone, coal, or else it can also be used for hauling the men to and from work. Of course, it will not entirely replace teams.

There should be a winch, two sets of blocks with tackles and snatch blocks, and pipe or wooden rollers. Good hemp rope in various lengths should be kept indoors whenever not in use.

Be sure that shipments are made in proper time to keep

the work going at its maximum. This applies to machinery as well as to building materials.

It is important, in order to avoid second handling and confusion, to place every shipment in its proper place to prevent again being moved.

A railroad car will hold as an average about 200 barrels cement, equal to 800 bags, 16,000 board measure of light timber, 16 cords of wood, 45 cubic yards of sand plus gravel, etc.

Construction work should be protected against fire and

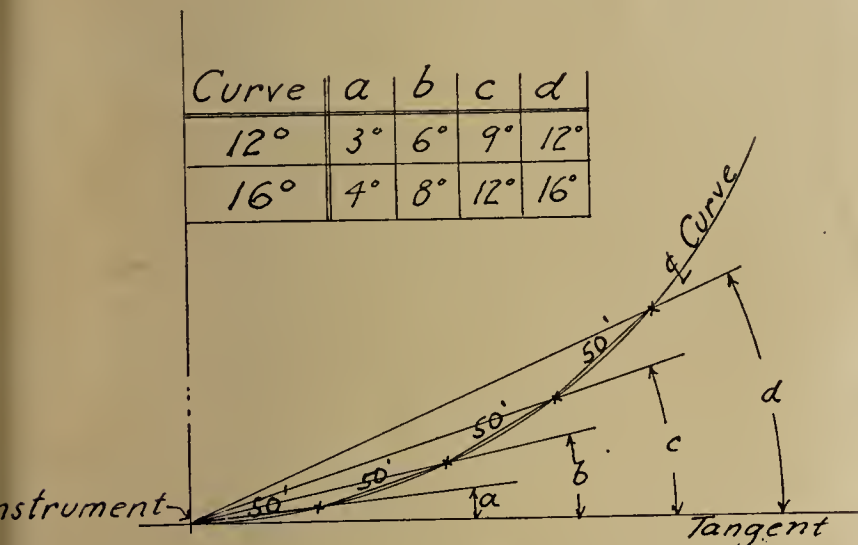


Fig. 4

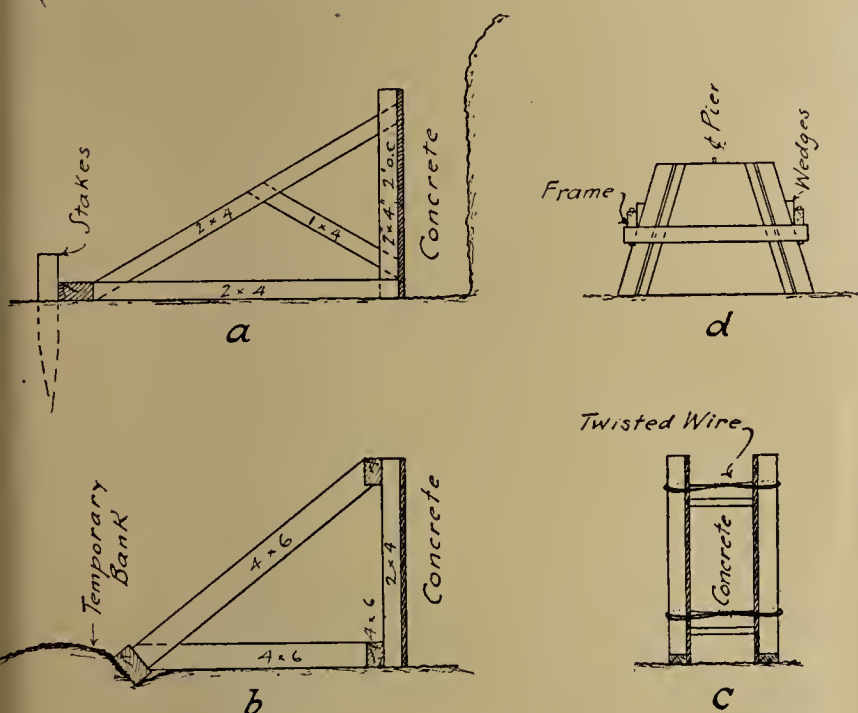


Fig. 6

accidents. Such safe-guards have to be changed continually.

Construction Work During Winter.

Most construction work on heavy clay product plants in the northern and middle states is done during the winter months when orders are not rushing. There are many points in its favor especially if the season happens to be an open one. It is important that all brick and concrete work be protected from frost until the mortar and concrete are so dry and hardened that no water is left to freeze.

To effectively accomplish this often requires a lot of time, labor, and extra expense. Use of hot water and heating of the sand will help some but they will cool rapidly after being placed; salamanders and coal stoves may be set up so the wind will drive the heat and smoke towards the work. The

direction of the wind might change suddenly over night and the cold continue long enough to do a lot of damage if proper care has not been taken.

Empty cement bags, boards, roofing-paper, straw and manure can be laid over the concrete. A concrete trench can be protected by covering the top, and then placing oil lamps inside of it. It is advisable to purchase several large tarpaulins before commencing winter work. They can also be used to great advantage for protection of men, machinery and equipment against rain (See Fig. 8).

Winters with continually changing temperatures from be-

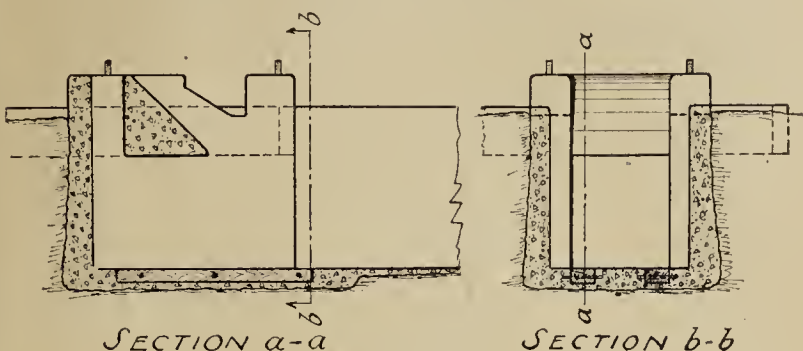


Fig. 8



Fig. 7

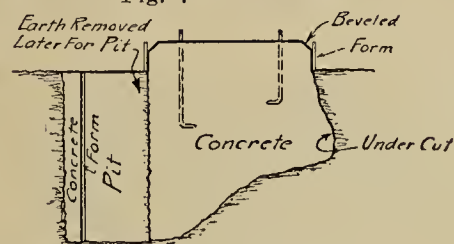


Fig. 10

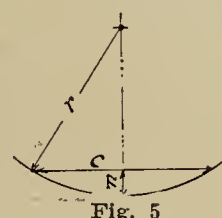


Fig. 5

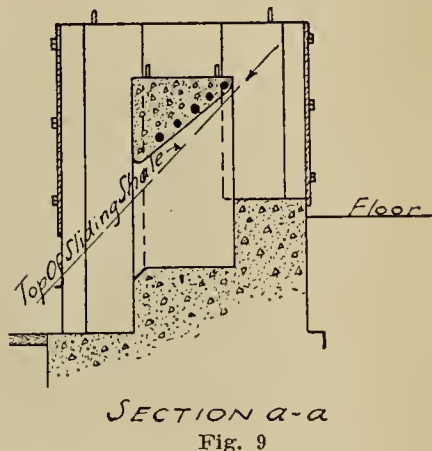
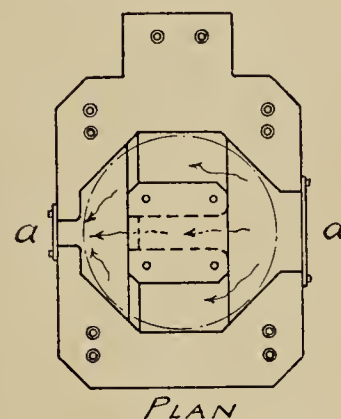


Fig. 9

low to above freezing are apt to do more damage than cold steady winters.

Degree of curve	Radius of center line of curve	Radius inside inner rail r	For cord c = 50' Middle ordinate m =	For cord c = 62'-4" Middle ordinate m =
12°	478.34	328.51	8"	12"
14°	410.28	447.59	10"	14"
16°	359.26	379.53	12"	16"

Brick or concrete stacks should not be built during winter. It is advisable to have all the outside walls and crown of kilns done before the cold weather sets in, and then build the kiln bottoms and bag walls during winter with salamanders for

protection. If no coke can be had for salamanders, it is better to use coal stoves.

When constructing a number of round kilns during winter, we have found it advisable and profitable to erect a construction shed, as seen in Figs. 1 and 2. It is octagon in shape and the sections are bolted together. The cost is about \$600.00. A number of uses can subsequently be found for storage, garage, etc.

All brick used for construction during winter should be stored under roof.

Avoid use of frozen sand or gravel for leveling or tamping under railroad ties or for other use. It will yield after thawing and throw the work out of line or level. Keep frost balls out of the mixer.

All the pipe lines should either be properly protected (un-

Earth Work.

Steam shoveling is the only and proper method for deep cuts of over four feet and for hard material. It costs between 30 and 50 cents per cubic yard. Contract should be let on cubic yard basis.

For soft ground, like loam, top soil, gravel, or sand, less than four feet in depth, and not to be hauled distances exceeding one hundred feet, scoops and teams will give the best results, costing around 50 cents per cubic yard.

Scoop work can often advantageously be done in connection with steam shovel work for trimming off the edges or for some special excavation of minor depth. Scoops can also be used on large machinery foundations.

The capacity of a scoop, dragged by two horses, is one quarter cubic yard. Most often the ground requires some

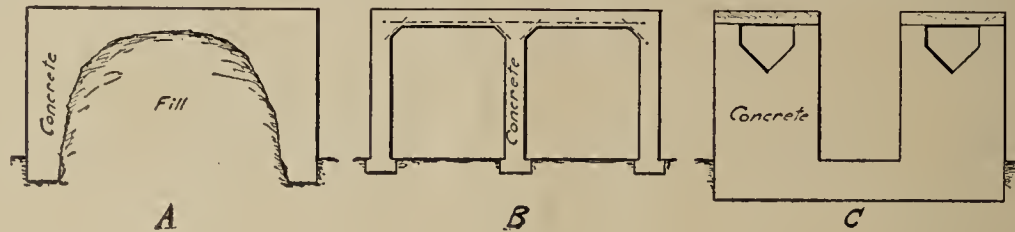


Fig. 11

derground in sawdust) or be drained every night. All valves should have drip cocks. One man should be responsible for the pipe lines, attending to them every night and inspecting them the first thing every morning. All the piping, which is apt to freeze, should be painted red.

Laying-Out.

We consider it essential that the construction engineer shall be familiar with the operating of the plant under construction whether it be the plant kiln or drier. A drawing might not be fully clear or dimensions not checked or errors not detected that will require quick decision and remedy. We have seen the most artistic picture drawings which were practically worthless to the construction engineer. He had to develop speedily his own sketches.

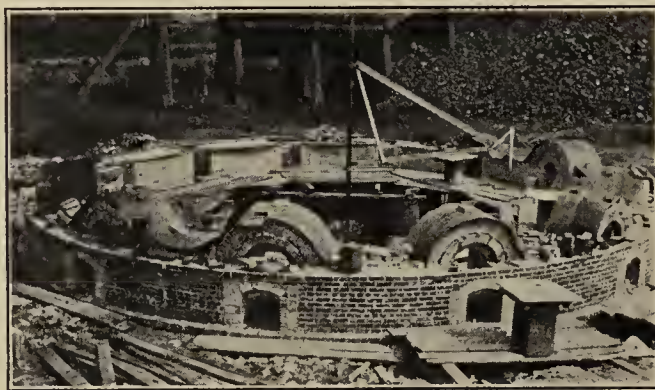


Fig. 12

There should be a transit, and also a small level. There are special builder's levels which have a tilting telescope. They are light and easily handled, but not as sensitive nor as accurate as transits. We prefer a transit for plant layout.

No stakes should be placed at corners of buildings nor at centers of posts for in excavating they will have to be removed. Corner stakes, set a few feet outside (Fig. 3) can remain undisturbed and the work checked at any time. It is essential to establish a grade line high enough so that the bottom of the deepest pit will be above the high water mark of the underground water.

plowing before scoops can be used. This can be done by teams but often most advantageously by tractor.

For small machinery foundations and trenches for building walls, the pick and shovel method is the only one, though it may figure per cubic yard three times as much as the scoop method, costing anywhere from \$1.00 to \$2.00 per cubic yard.

The large Maney scrapers of a rated capacity of one cubic yard can be used to advantage with a tractor. We have used one and even two on one tractor.

Whenever possible, any kind of earth work should fulfill the double purpose of a necessary cut in one place and an essential fill in another place.

Road and Railroad.

Burned waste material, also ashes with cinders are avail-



Fig. 13

able and they should be used unsparingly for road building and upkeep.

The vehicle road connection should be given as much study as the railroad switch.

Steep roads, even for short distances, should be avoided, keeping below 3 per cent grade.

For railroad switch, figure about one and a half foot from top of rail to the ground, whether cut or fill, for the rail, the tie and the ballast. After the ground is fairly level, place the ties on the ground about two feet apart, actually 16 ties for each 33 feet rail length. Then roll the rails on top of the ties, breaking joints, and bolt with fish plates each

line of rail. Then locate one rail line in reference to the ties by measuring a 21-inch stick from outside web of rail to end of each tie, and then drive the spikes, two in each tie diagonally opposite each other.

The other line of rail is spiked after using the gage from the first line. Special tie plates should be used at switches and also at curves between top of tie and bottom of rail. Dump the ballast (cinders or gravel) over the track, and raise the track by railroad jacks to level marked by stakes and work the ballast underneath tightly with tamping picks for about two feet under the rail but not along the line. This should be done roughly all along the line. Later go over again in the same way for finer adjustments which can be well judged by the eye.

For curves, no rail benders are required. The line is simply bent or forced over with crow bars after the rails have been bolted together firmly. The curve can be laid out with a transit using iron pins every fifty feet in the center of the track, as shown in Fig. 4. The railroad companies usually do not permit of a curve more than 12 degrees, but 16-degree curves are built for light equipment.

No railroad grade should exceed $1\frac{1}{2}$ per cent.

Ninety pound rails should be used and not lighter than eighty pound rails for factory switches. The outer rail of a curve should be between 2 and 4 inches higher than the inner rail to prevent the flange from crawling up the outer rail.

A simple way of ascertaining the degree of a curve is by holding a tape against the inner rail and measuring the middle ordinate. We have figured it out for a 50-foot cord, though the customary method is to use a cord or tape length of 62 ft. 4 in. where the middle ordinate is numerically equal to the degree of the curve (see Fig. 5).

In calculating a railroad bank or fill, it should be borne in mind that the angle of repose is to be taken as $1\frac{1}{2}$ to 1 which will make the bottom of a high bank or the top of a deep cut extremely wide. The top of a railroad bank should not be less than 12 ft. and better not less than 14 ft. wide, the ties being 8 ft. 6 in. long.

Good ties can be made out of oak or chestnut. Impregnated ties are being used to advantage.

It is best to have frog and switch work done by the railroad section crews, while the ordinary track and curves can be done cheaper by the builder.

Form Work, Concrete and Machinery Settings.

Tongued and grooved sheathing, 6 in. by $\frac{3}{4}$ in. are frequently used for form work. These latter may be used for roofing, siding or partitions. Tongued and grooved sheathing should not be used where the forms, after stripping, have to be recut to be used over again. The cement gets into the grooves and the boards will have to be cleaned and scraped.

The studding should not be less than 2 ft. apart for $\frac{3}{4}$ in. boards, while with 2 in. boards the studding can be spaced wider. The studding can be of hard wood while the boards should be soft wood to be easily sawed and nailed. Only two nails should be used at the end of each board. It is the studding that gives strength to the form.

For good form work, to be used again, we would recommend 8 in., 10 in. or 12 in. wide boards, dressed, and either $\frac{3}{4}$ in. or $1\frac{1}{4}$ in. according to the size and purpose of form, made of common white pine, yellow pine, spruce, or hemlock. Wide boards save time in handling, in nailing, and in sawing. For studding, 2 in. by 4 in. lumber is customary.

The bracing of the form is most important. If at all possible, the bracing should be carried against a fixed and solid object, like a wall or a foundation. The forms can be

braced, as shown in Figs. 6a and b. Two parallel forms of a straight wall are best held together by soft steel No. 13 wire looped around the studding and then twisted tight as illustrated in Fig. 6c. A pier can be braced by a wedge frame as shown in Fig. 6d.

Edges and corners of exposed concrete work are easily damaged. Outside corners should be beveled and it is desirable to have a fillet in all inside corners.

The mixture ordinarily used for plain concrete is 2-3-4. Proportioning by shovel is accurate enough. If sand and gravel are obtained mixed, more cement must be used.

On an extensive concrete job it often pays to set up a concrete chuting tower which should be high enough that every corner of all forms can be reached from the end of the chute. The material will slide at an angle of about 25 degrees over the first chute which receives the material at a certain momentum from the hopper while the lower chutes should have an angle of about 30 degrees. Use of water to make the concrete slide the chutes is detrimental to the strength of the wall. Fig. 7 shows bracing and use of chuting tower in construction of reinforced concrete clay storage. This tower was later used for the kiln and kiln building foundations.

On small jobs, it is advisable to move the mixer rather than to lengthen the wheelbarrow hauls.

If the forms are taken off the second or third day, the wall surface may be finished with a wire brush and the corners beveled. Care must be used in stripping the forms too soon since the concrete can easily be damaged.

Fig. 8 is the foundation of a single roll crusher. It provides a concrete hopper and sufficient depth for the conveyor or elevator. The pit is large so as to give easy access to the lower part of crusher and conveyor. The pit is also provided with sleepers, embedded in concrete for holding the tail ends of conveyor or elevator. On each side of the main walls is a shallow pit for the gear on one side and the pulley on the other side, but wide enough to allow sliding them out over the shaft. The anchor bolts are shown solid in concrete.

Fig. 9 shows a pan foundation for a gravity bottom which permits of easy access to the step box. There is an opening through the step box foundation, its top being reinforced. This gives a solid foundation for the step box yet gives almost the same free passage to the material as the steel beam supports. The anchor bolts are to be placed within large pipes fully to the bottom since pan foundation bolts rarely fit just right, the pan being made up of several castings bolted together.

In Fig. 10 is a cross-section through a foundation for an auger machine with its adjacent pit for waste clay conveyor or elevator. The excavation next to the pit is carried down fairly plumb to act as form for the machine foundation, and is removed afterwards for the pit.

In Fig. 11 we have a double motor setting for two pans in three different designs. Design "A" was submitted first, but rejected since the earth inside the form could not be kept in shape and it would also shrink away later. Design "B" treated the foundation as a bridge or a culvert with open passages and a reinforced slab on top. Design "C" was finally adopted. It provides a substantial footing and enough weight to counteract the pull from the two pans. The sketch is shown so the pull from the motors is against the observer, hence the front and rear of design "C" are battered, which the picture does not bring out.

Kilns and Stacks.

A mason will lay a little more than half the number of
(Continued on page 495)

ONE OF THE STRANGE REASONS WHY PAUL BOLLE
PREFERS HIS WORK MENDING TALL CHIMNEYS
FROM A TWENTY-INCCH PLATFORM.

PAUL BOLLE SPENDS a considerable portion of his days on a 20-inch platform suspended from a cable stretched around chimneys, all the way from 6 to 385 feet up in the air. Bolle says he's safer there than on the ground—no automobile can run over him. "Sometimes when I get near the top of a chimney, the smoke and gas coming out of the top bothers me a little," says Mr. Bolle.

Mr. Bolle is a professional steeplejack. Without any thought of personal danger, he ascends to his precarious perch on a chimney, mending it while the fires below go full blast.

"They have to keep going," said Mr. Bolle. "Suppose the electric light company here—I am repairing their chimney now—was to shut down while I fixed the damage done by a recent stroke of lightning. Miami would be in a pretty fix without lights or electric power, wouldn't it?"

His statement not being questioned, he went on to explain why it is perfectly safe to stand on a narrow platform 125 feet in the air, with his heels hanging over the edge.

"The platform I use is a German patent," he said, "That's how I happen to be in this business. I was born in Nauen, Germany, and was a member of the mercantile marine until I skipped a ship in an American port and settled in the United States. I got my early training climbing about the masts and sails about a ship. This stood me in good stead when I was looking for work in America.

"The next part of my training was in helping hoist safes into sky-scraper offices in New York. Every man in that business has to take his turn like this: The safe is hoisted from the ground to the window of the office into which it is to go. The man whose turn it is to ride fastens the rigging in the window of the office and then comes down and rides up on the safe so as to keep it from damaging itself and the building. He looks pretty closely at the rigging, too.

"Nobody likes to ride the safes and that is why the man riding it superintends the job. He's boss and what he says goes.

"One day I fell in with some German workmen who came over here with the patented scaffold which I use. They couldn't speak English and it was easy for me to get them to show me their trade. They had plenty of work, too, because the scaffold commonly used in America then was built from the ground up. To show the difference the scaffold I use costs about \$50, while the old type of scaffold cost about \$3,000 and could be used on only one job, while mine can be taken everywhere.

"Well, that's how I happened to get into the business.

"How do I work the scaffold? Well, I put a cable around the chimney and tighten it by turning a bolt. Then I hook these triangles, which have an iron hook on the part that goes next to the chimney, on the cable, and lay boards across them. The boards are tied down to keep the wind from blowing them away. These triangles, with the boards across, give me a platform completely encircling the chimney.

"When I want to move the platform up, I fasten another cable up the chimney as high as I can reach. I have two extra triangles which I fasten on this cable. My helper climbs up the ladder and I hand the boards on the two triangles to the right of the upper two to my helper and fasten a rope to the triangle immediately under the right-hand triangle on the upper cable. My helper steps on the boards on the new platform and I move over to the left. I take the boards off the section and my helper jerks the triangle loose and swings it over to me. I take it on around the chimney, fasten it, and

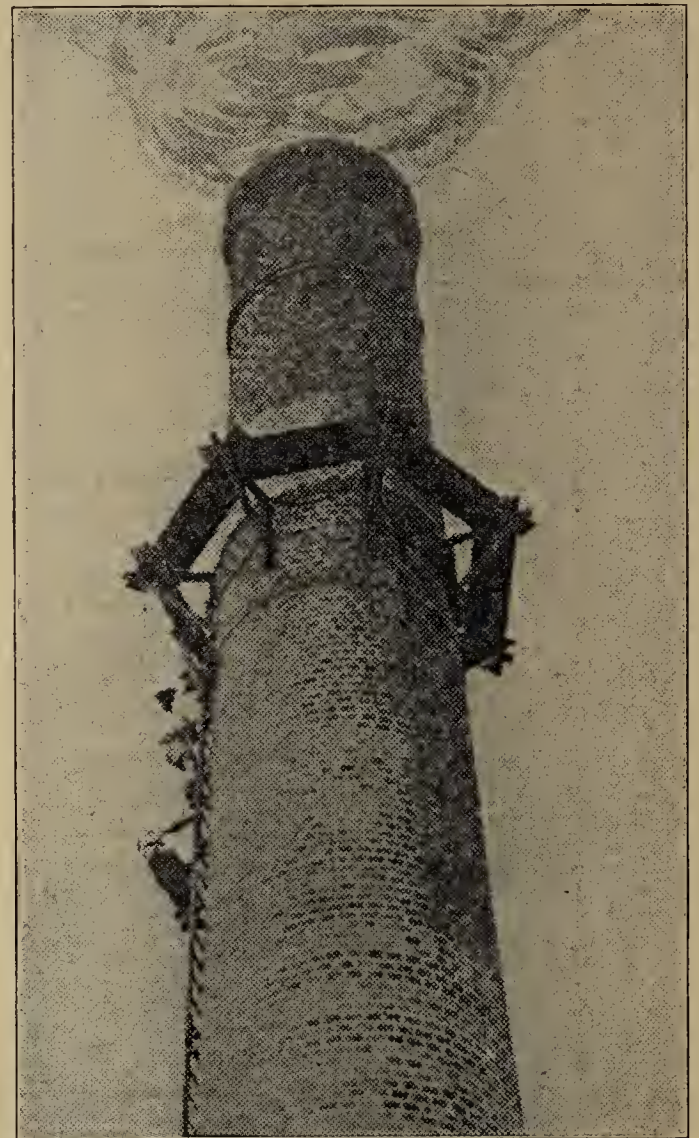
then hand the boards of the next section up, and so on until on the last section.

"The last triangle is easy. I just stand on the triangle and hand the boards up, fasten a rope to the triangle and go up the ladder."

The triangle on which he stands, he neglected to mention, is just about four inches wide. And sometimes he does it with a stiff wind blowing! And 385 feet in the air!

The ladders, he explained, are hooked on square spikes driven directly into the chimney and tied to the spikes with a rope. Mr. Bolle declares the spikes are as solid as a nail in a board.

"A lot of the chimney trouble comes from building a chimney for small boilers and then putting in large ones," Mr. Bolle said. "This causes them to crack and strain, and they



Paul Bolle and his Partner, Climbing the 150 Brick Stack of the Miami Electric Light Plant.

must be repaired or the whole thing would collapse. Some of the worst breaks are caused by lightning striking the chimneys..

"Up in New York one time a chimney was struck by lightning and there was a crack about eight inches wide in it, making a triangle with the base at the top. All of the weight of thousands of bricks was resting on one brick. I was working on another chimney, but was sent there the next day to fix it. The chimney was only fifteen feet from the railroad and trainmen were afraid to run their trains past for fear the jar would knock it over. They did run, however, and I went up the chimney. Every little while, though, the owner would come out and have the nerve to call me down.

"There's a train coming,' he would say to me when I came down."

"Let it come,' I said. 'I won't stop it.'

"Well, I thought I would tell you. I knew you were up there on the chimney."

"I finally finished the job and was glad of it."

"Another time I was called into the office and the boss told me a chimney in a hospital in Massachusetts had been struck by lightning and one side torn off. I went up there—several others suddenly got sick when they were told about the job. I built my scaffold and went up and knocked all the loose bricks down. They sent a bricklayer up there and when I told him he was expected to lay the bricks there, he told me to look for another bricklayer."

"Another one came up. I told him all the loose bricks had been knocked down so he went to work. He was about a third

of the way up when a brick fell, nearly hitting him."

"Where did that come from?' he asked."

"The top, I guess,' I said."

"Guess so,' he said, and went on working."

"We have some peculiar things to work on, but it's as safe as any other job. No one has ever been hurt while they were working for me."

"No, I've never lost my nerve. Never thought about it."

Mr. Bolle works for the Alphons Custodis Chimney Construction Company, one of the largest businesses of its kind in America. It has branch offices all over the United States, and he has worked in several states building and repairing chimneys.

"New chimneys are built from an inside platform," he said. "I don't like to work on them though, as they are too hard to raise."

STANDARDIZED COSTS FOR CLAYWORKERS

By Alfred Baruch,
Consulting Industrial Engineer.

Chapter Ten.

RECONCILIATION OF CLAYWORKING COSTS.

BURDEN IS SO ELUSIVE in its character that it is likely to make the difference between profit and loss if it is not determined properly. Even where the burden is known it is often applied in the wrong way so that costs are arrived at which are unfair to competition and unfair to the customers as well.

There are many methods of applying burden to the cost, but the problem is to find the right one in each case. These methods are referred to as the blanket rate, the productive labor cost, productive labor hours, and the machine or production center rate.

The blanket rate method is the one that is often used. It makes the burden a proportion of the combined cost of labor and material and assumes that the burden will rise or fall in proportion to the rise or fall in the cost of labor. As a matter of fact the burden is fairly constant, while the price of labor fluctuates continuously. For example, as a result of his past experience the clayworker decides to charge 30 per cent of the cost of labor, clay and coal for burden. The cost of these elements for the year previous was \$80,000, of which \$50,000 was clay and coal. In the course of the year labor takes a 50 per cent average drop in price. That means that the cost of labor, clay and coal is \$55,000, instead of \$80,000. By charging a blanket rate of 30 per cent the return for burden is \$16,500, when experience shows that this should be \$24,000.

A strange reason for not using the proper burden method, but one which is often advanced, is that it makes no difference what methods you use because the price is really determined by competition and not by any figures you may have as to the cost of production.

Under the direct or productive labor cost method, burden is applied to labor only. Applying burden to productive labor permits monthly comparison with actual expenditures. This cannot be done under the blanket rate method since the expenses do not vary in proportion to the cost of labor and there

is no way of telling whether the expenditure is justified or not.

Burden varies in proportion to the time of operation. This is true of the regular work. It incurs as much expense as it takes time. That is, if one bank requires a year to excavate, it will take a year of supervision, insurance, rent, interest, taxes, etc. It is not fair to charge one period with all these expenses because the rest of the time the plant is not used to its full capacity. Therefore, a fixed charge must be made based on the time the men work in each bank.

All men are not paid the same wages. Burden cannot be based directly on wages because each man incurs approximately the same amount of indirect expense. For example, two cutters may be getting different wages, but they both require the same amount of supervision and space to work in.

The departmental rate becomes necessary wherever the department uses heavy and expensive equipment which involves considerable outlay of money for purchase and for maintenance. For example, an artificial drying system, where used, would require buildings, ovens, tracks, cars, etc. It would certainly not be fair to charge a lot of ware that is dried in the sun at the same rate as one that is dried artificially. Consequently, it is necessary to set up a special departmental rate and to charge each lot that goes through the department at this rate on the basis of time required in going through or else on the basis of a fixed charge for each ton.

The burden in this case must be made up of the interest on the investment, the insurance, this department's share of the property taxes, depreciation, and then the regular departmental burden rate in addition. Where the plant is large enough the same principle must be used for the moulding and drying departments.

Thus, it can be seen that one method of apportioning burden is possible all through a clay plant.

The machine rate or the productive hour rate then be-

comes the basis for measuring the efficiency of the individual department. Where the productive hour rate is used, this is done by taking the normal productive hours for the month and multiplying them by the rate. The result is compared with the actual indirect expense for that department for the month, and the difference is carried to a reserve account, where it is balanced against the differences of other months. That is, if last month showed a loss for the kiln department of \$250.00 and this month showed a gain over the standard of \$300.00, the net gain for the two months would be \$50.00.

Cost and Financial Statements.

The statement has been made before that the chief difference between the modern methods of managing a clay plant and the old ones is that now the owner knows where he stands much oftener than he did before, and in addition he has the various elements of his business so analyzed for him that he can locate the trouble almost at once and correct it. He does this through a monthly report which tells him of the profit or loss that he has earned during the month on the plant as a whole, on the individual department, and if desired, on the individual ton of ware. The profit or loss on the plant as a whole is made possible through the use of standardized labor rates. The departmental profit and loss is made possible through the predetermined departmental rate which, when multiplied by the number of working hours, shows whether or not the expenses for this department for a month have been exceeded, and also shows whether the predetermined rate is based on actual conditions. The source of information for labor costs is the daily distribution-of-time sheets, the predetermined cost of depletion as shown by the excavating and mining reports.

Monthly Comparison of Operation Costs.

All the elements of cost are thus collected in one way or another. A comparison of the actual cost of each operation with the estimated cost of it is brought about through the form known as the Monthly Comparison of Operation Costs. This form is divided into columns headed Order Number, Sales, Profit, Loss, Labor Cost, Depletion Cost and Indirect Cost. The column headed Order Number should contain the order number under which each operation is performed. The sales for the period covered by the statement are shown in the sales column for each kind of material sold. If the order is only partially complete the figure in the sales column represents the value of the quantity shipped to date.

Profit or loss in this case is the difference between the sales figures and the total of labor, depletion and burden costs. The labor, depletion and burden costs are again subdivided into two sections headed Actual and Estimated. The information for the Actual column is obtained in each case from the Production Order issued to the shop. The burden estimated is the indirect expense allowed for in the original bid. The actual burden is the same as the predetermined, but multiplied by the actual labor hours consumed by the order. To illustrate, we will assume that the shale bank is being excavated by one steam shovel at the rate of 50 tons per hour. The predetermined burden rate is \$5.00 per hour or 10c per ton. If the production at this bank should average 40 tons per hour for one week, the actual burden rate will rise to 12½c per ton.

The above form is intended to bring together on a single work-sheet the cost of operating by work units. The prime cost necessary to this report must be obtained from the labor and excavation reports. Burden can be found by multiplying the predetermined rate by the labor hours if the production hour method is used or by the unit or departmental hours if that method is used.

The Monthly Comparison of Plant Costs.

However, this method shows only profit or loss on the individual operation. The total profit or loss for the month is determined in the following manner: An itemized state-

ment of all indirect expenses by departments is made. This statement follows the form indicated in the illustration with the exception that it makes a comparison, item by item, with the standard cost. For example, the analysis of excavating burden in the illustration shows the average figures for expense per month. In the monthly statement this average is placed side by side with the actual expense and the increase or decrease for the month is shown in the adjoining column. When the actual expenses have been written, the predetermined rate per excavating hour is multiplied by the number of productive labor hours in this department for the month and the result is compared with the actual burden to see whether or not enough has been earned this month to cover the department's expense. For example, we will assume that the expenses for the month have been \$10,000 and the excavating hours ran to 2,400 hours. The predetermined rate in the illustration given in the previous article was \$5.00 per hour, therefore the burden earned this month is \$120.00, while the expenses amount to \$10,000, showing a burden profit of \$2,000.

Monthly Comparison of Excavating Burden—July 1, 1923.

Charge No.	Labor Expenses	This Month	Standard	Increase	Decrease
300	Foreman	\$ 225.00	\$225.00	.....	.....
301	General Help (2)....	350.00	350.00	.....	.....
302	Shovelman	140.00	140.00	.....	.....
303	Special Help (engineer).....	40.00	40.00	.....	.....
	Supplies				
320	Repairs	147.00	150.00	.....	\$3.00
321	Oil	62.00	50.00	\$12.00	.....
322	Small tools	75.00	50.00	25.00	.....
323	Nails	2.00	5.00	.....	3.00
324	Coal	1,200.00	1,300.00	.....	100.00
325	Miscellaneous	400.00	300.00	100.00	.....
Apportioned Expenses					
	Taxes	120.00	110.00	10.00	.....
	Stock insurance	40.00	40.00	.....	.....
	Light (30% of \$200.00).....	45.00	60.00	.....	15.00
	Power (60% of \$100).....	60.00	60.00	.....	.....
	General expense	2,300.00	2,400.00	.....	100.00
Total		\$5,206.00	\$5,280.00	\$147.00	\$221.00

The total actual and standard figures for each department are carried to a sheet known as the Monthly Comparison of Plant Costs. The totals of each department are added, making the total plant burdens. To this is added the direct labor cost, the supplies purchased, and the inventory at the first of the month. From the total of the above figures is subtracted the inventory at the end of the month as shown by the stock records to give the net plant cost for the month. To the net plant cost is added the office and selling expenses which gives the total cost for the month. The total cost is subtracted from the sales for the month as shown by the Monthly Comparison of Operation Costs, which gives the plant profit for the month, that is, the profit on operations alone.

Interest and Depreciation in Plant Costs.

Interest as a part of the cost has been the occasion for much debate and a word must be said about it. Interest is usually confused with profit. Profit is what is left after all expenses and charges have been paid off. It is a reward to a business man for taking the risk of engaging in business. It is true that a man cannot govern the price by including interest in his cost and that the mere act of his charging interest does not mean that he will get it back in his price. But neither does charging his salary or rent mean that he will get them back. That is the risk that he takes when he goes into business. However, the fact that he will not get it back does not mean that it is not part of his cost. If a man should borrow money to operate his business he would certainly have to pay interest on it before he could declare a profit.

Rent and interest are very much alike. A man pays rent

when he has not the money to buy the building he is in. He may prefer to borrow the money and buy the building rather than to pay rent on it. In that case, interest on the borrowed money would become a substitute for his rent. Or suppose that a clayworker wishes to substitute a steam shovel for diggers and that in order to do this he must borrow the money with which to buy the machine. The interest that he has to pay for the borrowed money in this case becomes the substitute for labor wages that he has paid. Thus interest is really a part of the cost, but the conclusion is forced on us that interest on the plant investment is inseparably a part of the plant cost. Interest and rent are essentially the same.

Depreciation

Another part of the cost that is often ignored is depreciation. Machinery wastes away and some kind of provision must be made to replace it. It is not enough to think that the earnings will take care of replacements. A reserve fund must be set aside with which the new improvement can be bought. This is actually necessary to keep the plant up to

LIVE WIRES OF THE UNITED CLAY MINES CORPORATION.

THE MINING and marketing of raw clays for various purposes in the ceramic and terra cotta trades is a much more extensive and important enterprise than is generally known even by those in the clay business. One of the leading firms in this line is the United Clay Mines Corporation of Trenton, N. J. This company was established over twelve years ago by George C. Crossley, the present head of the organization, and from a small beginning has grown into a very important industry. This fact is made manifest by the employment of a number of specialists and salesmen who are skilled in the clay arts.

The company is the only one specializing in high grade clays of every kind and for all purposes, having clay mines in different sections of this country and abroad, from which



Live Wires of the United Clay Mines Corporation.

the latest developments in equipment, if for no other reason. Depreciation may take place due to wear and tear, to decay, to neglect, and to obsolescence.

In order to provide for a depreciation reserve it is necessary to find a systematic method of evaluating the equipment and the assets. The two best methods are known as the schedule rate method and the percentage on value. The schedule rate method makes a flat charge every year. Assume that a piece of equipment is worth \$1,000.00, and that its expected life is ten years, at the end of which time it should be worth \$100.00 as scrap. The remaining \$900.00 are divided by 10, which gives a yearly rate of \$90.00.

The percentage on value method would take a certain figure, say 10 per cent of the appraised value every year as the basis for depreciation charges. In the case cited above at 10 per cent the first year's charge would be \$100.00, the second year's charge would be \$90.00, which is 10 per cent of that year's valuation of the equipment mentioned, the third year would be \$80.00, and so on.

(To be continued.)

all kinds of high grade clays are produced. Their products are used in the manufacture of china, porcelain, as a filler in making paper, and also in asbestos products. Clay, too, issued in the production of rubber tires and all rubber goods, and in the manufacture of various kinds of cements and paints, as well as many other products. We are wondering if a good quantity of it is now demanded for beauty clays, used by the fair sex to preserve their youthful appearance.

The accompanying photograph was taken in the general office of the company recently at a regular get-together monthly meeting of the officials. Those in the group from left to right are: Ernest Coddington, mine superintendent; M. O. Hendrickson, eastern sales manager; C. C. Engle, sales manager; George C. Crossley, president and general manager; F. A. Blakesley, office manager; Herbert A. Miles, western sales manager; Archer Coddington, mine manager; Arthur Simmers, superintendent.

FIRE TESTS OF BRICK WALLS.

Gratifying Proof of the Stability of Brick Walls as Proven by Tests at Bureau of Standards, Washington, D. C.

BRICK WALLS have been generally recognized as effective in preventing spread of fire, although building codes differ greatly in requirements relating to thickness of walls, due in large part to lack of definite knowledge regarding their heat insulating properties and stability under fire conditions. Series of fire tests and fire and water tests are being conducted at the Bureau of Standards, U. S. Department of Commerce, on walls of representative clay, sand-lime, and Portland cement-sand brick to develop the information necessary for safe and economical construction. The test walls, 11 feet high and 16 feet wide, are built under conditions intended to secure the quality of masonry obtainable in building construction, and in the fire tests are exposed to a controlled test fire on one side for periods up to six hours, which is deemed to cover the range of exposures incident to fires in buildings.

In the fire and water tests a hose stream from a $1\frac{1}{8}$ inch nozzle under 50 lbs. water pressure is applied over the hot side, following a one-hour fire exposure.

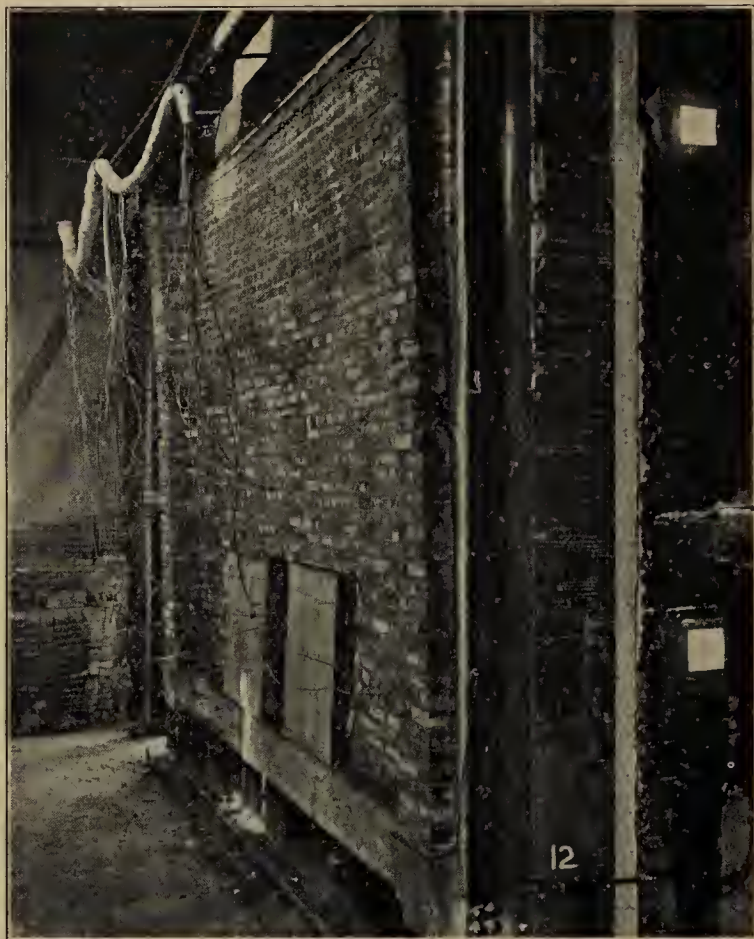
The walls so far tested have either been restrained by being built into rigid containing frames or have been unrestrained with full opportunity for expansion at sides and top. The greater number of walls were laid with brick flat in common or American bond with one header course per five stretcher courses. Some test walls were built hollow with brick on edge, headers and stretchers alternating of the type known as the all-rowlock Ideal wall construction. The thicknesses were generally 8 and 12 or 13 inches, although in clay brick a few tests of 4-inch walls were made. Most of the walls were laid in Portland cement-lime mortar of the proportions 1:1 $\frac{1}{4}$:6, the batch measure being one bag cement, one bag hydrated lime weighing 50 pounds and 6 cubic feet of screened damp sand, the average dry content of which weighed 75 pounds per cubic foot. The walls were laid in a 1:3 Portland cement and sand mortar and two in in a 1 $\frac{1}{4}$:3 hydrated lime and sand mortar.

Test Effects and Results.

On application of heat the greater expansion of the wall materials on the exposed side caused deflection of the central portion of the wall toward the fire and the top of the unrestrained walls away from the fire. No walls eight inches or over in thickness collapsed from deflection. Four inch walls developed failure or excessive deflection after from three to six hours fire exposure. The cracks formed in the unrestrained walls were seldom over $\frac{1}{16}$ inch wide, except at the borders with the panel from where larger openings were formed on the unexposed side by the tilting of brick from deflection of the wall. In the unrestrained walls cracks up to $\frac{3}{8}$ inch wide were formed on the unexposed side, which generally became smaller toward the exposed side. The brick units in the fire tests showed little spalling, although frequently cracking longitudinally with the wall $\frac{1}{3}$ to $\frac{3}{4}$ inch back of the exposed face. Fusion and fluxing up to about $\frac{1}{3}$ inch of brick thickness on the unexposed side occurred with one kind of surface clay brick and to a less extent with cement-sand brick. There was also some insistent fusion on the exposed side of the hard sand-lime and the shale bricks, the fusion effects being all confined to the last hour of the test. Only the exposed brick lost strength appreciably from the fire

exposure. As it concerns freedom from cracking, fusion affects and loss in strength the brick may be placed in the following approximate order: Red burning, high fusing surface clay brick; light burning low fusing surface clay brick; Portland cement and high silica sand brick; soft sand-lime brick, hard sand-lime brick, and shale brick. No general separations of exposed and unexposed layers of brick occurred, the one header course per five stretcher courses in the solid walls and headers alternating with stretchers for the hollow wall being a sufficient tie against the stresses induced by fire exposure.

Temperatures were measured in the furnace, at representative points within the wall and on the unexposed surface. Open or imperfect joints in the brick-work were revealed by early steaming on the unexposed side. Temperature changes higher by from 10 to 100 per cent than at the regular outside wall locations—obtained at cracks and open joints near the end of the fire tests with 8-inch walls. Under cotton and excelsior pads placed against the outside surface these temperature increases ranged from 5 to 60 per cent above those at



Unexposed Side of Eight Inch Solid Wall of Eastern Surface Clay Brick After Six Hours of Fire Test.

points freely exposed to the air. The range of maximum temperatures obtaining on the unexposed surface at points exposed to the air and not directly on cracks or imperfect joints is given in Table 1, the temperatures being in all cases the highest at one of five or more locations at the end of the 6-hour fire test.

Table 1.

Maximum temperatures on the unexposed side of brick walls at the end of the 6-hour fire test:

Nominal thickness and type.	Maximum at regular locations, degrees Fahrenheit		
	High	Low	Average
8-inch solid	367	193	359
8-inch hollow	522	453	486
12 to 13-inch solid.....	190	172	179
13-inch hollow	(at 5 hours)		172

Temperatures were also measured within the walls, the

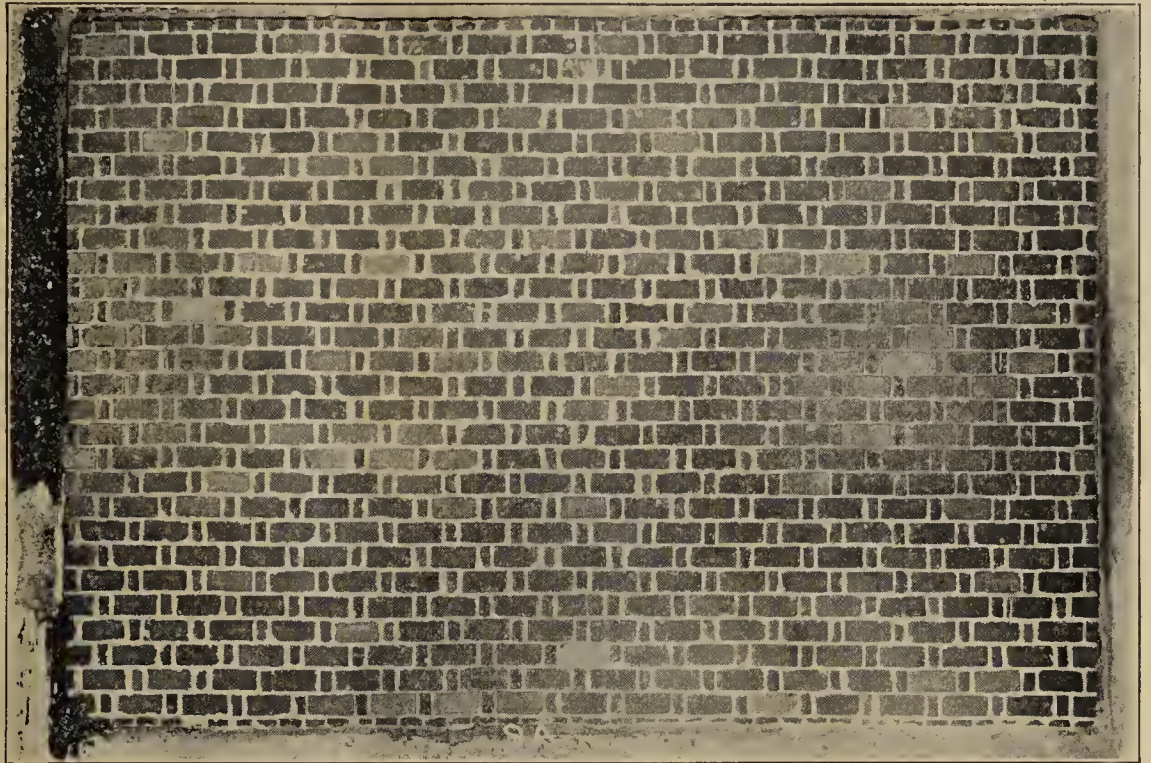
* Published by permission of the Director of the Bureau of Standards of the U. S. Department of Commerce.

critical point being 4 inches from the unexposed face which is generally the greatest depth to which combustible floor and partition members are entered. Taking 250 degrees C or 432 degrees F as the temperature that may cause ignition of such members, this limit was reached in 8-inch solid walls in 1¼ to 4 hours, in 8-inch hollow walls from 1 hour 6 minutes to 1 hour 26 minutes, and in a 13-inch hollow wall at 3 hours 36 minutes. This temperature was not attained in the 13 and

from 1.10 to 3.05 inches and the outward top deflection of unrestrained walls from 6.3 to 9.7 inches. Pilasters were built into the 8-inch unrestrained walls to avoid a too extreme condition, since some support is generally given by cross walls, pilasters and similar details in buildings.

In the fire and water tests no general collapse occurred, although partial local failure developed at the borders of unrestrained 8-inch walls covered by washing out of mortar

Exposed Side of
Eight Inch Unrestrained Hollow
Wall of Eastern Surface
Clay Brick After Six Hours of
Fire Test. Brick on
Edge.



Exposed Side of
Eight Inch Unrestrained Solid Wall
of Eastern Surface
Clay Brick After Six
Hours of Fire Test.
Brick on Flat.

13-inch solid walls, the temperature at this point being within a few degrees of 328 degrees F at 6 hours.

The maximum center deflection of the 8-inch restrained walls varied from one inch to 5 inches, the average for solid walls being 2.64 inches and for the hollow walls 2.24 inches. The outward deflection at the top of unrestrained walls ranged from 4.7 to 2.7 inches with averages of 7.63 and 6.30 inches for the solid and the hollow type, respectively. For 12 and 13-inch restrained walls the maximum center deflection varied

where the adherence to the brick was weak. The water dislodged particles of the brick cracked in the preceding fire exposure and further loss of material was caused by the sudden cooling and erosion, the damage to the brick being about the same as in the 6-hour fire test.

Conclusions.

The results of the tests are summarized in Table 3 as fire resistance periods, these being safe units that can be directly

applied to building exposures. They are based on the temperatures developed in the tests, with necessary margins allowed for possible higher temperatures at cracks and imperfect joints and under combustible materials stored against the wall, as well as for possibility of material and workmanship being inferior to that used for the test walls, although considerable care was taken to insure construction representative of actual construction practice. Materials are considered hazardous that will ignite at temperatures as low as 150 degrees C. or 200 degrees F., among which can be named, nitro-cellulose products (celluloid), matches, and a considerable number of chemical preparations. 250 degrees C. is taken as the approximate minimum ignition point for ordinary combustible materials of vegetable or animal fibers, after the comparatively short exposure incident to building fires. 250 degrees C. is also taken as the temperature at which combustible floor or wood partition members framing into the wall from the unexposed side may ignite.

Referring to Table 3, the 4-inch wall is given no classifica-

Standards on the whole investigation. It is seen from Table 2 that the framing of combustible members into 8-inch walls considerably decreases their fire resistance. The resistance of hollow walls thus used can be increased by filling solidly above, below, and between such floor members with incombustible material. The 12 and 13-inch solid walls were proven adequate for the full 4-hour period under all conditions.

As an aid in applying the resistance periods given in Table 3 to fire conditions in buildings, it can be tentatively stated that fire experience and some experimental investigations on the intensity and duration of fires, indicate that fires in residence and office occupancies do not generally exceed in severity the first hour of the exposure in the tests, and very exceptional fires, if any at all, will exceed the first 1½ hours' exposure. Fires in buildings used for merchandising, manufacturing and storage are known to be of greater severity, possibly in some cases equivalent to the 4-hour exposure, depending on the amount and character of combustible materials present. The above considerations apply to interior ex-

Table 2—Fire Resistance Periods of Brick Walls.

Thickness and Type.	Interior Structural Members Framing Into Wall.	Materials Protected.	Load on Wall.	Fire Resistance Period.
4-inch solid	Incombustible and fire resistive	Nonhazardous	Nonbearing	1 hour
8-inch, solid	Incombustible	Nonhazardous	Nonbearing	4 hours
8-inch, solid	Incombustible	Hazardous	Bearing or nonbearing	3½ hours
8-inch, solid	Combustible	Hazardous or non-hazardous	Bearing or nonbearing	1½ hours
8-inch, hollow	Incombustible and fire resistive	Nonhazardous	Bearing or nonbearing	2½ hours
8-inch, hollow	Incombustible and fire resistive	Hazardous	Bearing or nonbearing	1½ hours
8-inch, hollow	Combustible, on one side only	Hazardous or non-hazardous	Bearing or nonbearing	¾ hour
8-inch, hollow, filled solid at floor lines	Combustible or incombustible	Hazardous or non-hazardous	Bearing or nonbearing	1 1/3 hours
12 or 13-inch, solid	Combustible or incombustible	Hazardous or non-hazardous	Bearing or nonbearing	4 hours
12 or 13-inch, hollow	Incombustible	Hazardous or non-hazardous	Bearing or nonbearing	4 hours
12 or 13-inch, hollow	Combustible	Hazardous or non-hazardous	Bearing or nonbearing	2 hours
12 or 13-inch, hollow, filled solid at floor lines	Combustible or incombustible	Hazardous or non-hazardous	Bearing or nonbearing	4 hours

Note: When combustible or non-fire resistive floor members frame into 8-inch walls from both sides, to develop the periods above indicated, they must be so placed and protected as to have not less than 4 inches of solid material between them, and between their ends and the opposite wall surface. The filling at floor lines of hollow walls must be 4 inches or more in thickness above, below and between the floor members. In the case of 12 and 13-inch walls they shall not project more than 4 inches into the wall.

The floor members must be framed to release readily from the wall in case of collapse of floor construction in fires.

For the given resistance periods, load bearing walls must be laid in cement or lime-cement mortar not leaner than used in the test walls.

tion as a load-bearing member because of the high deflections developed. The 8-inch solid wall is given a 4-hour classification for protecting non-hazardous materials as based on temperatures developed on the unexposed side, but the load-bearing properties were not sufficiently defined in the tests so far completed to warrant load-bearing classification for this period. For the other uses of 8-inch walls where the resistance period is limited by temperatures within the wall or on the unexposed surface to values of 3½ hours or less, it appears safe to give load-bearing classification for 8-inch hollow and solid walls, as well as for all uses of 12 and 13-inch walls, as judged by the deflections during test and strength of brick and masonry before and after fire tests. A further series of fire tests of brick walls under load will soon be undertaken that is intended to determine more definitely the strength of 4-inch and 8-inch walls under fire conditions. At the conclusion of this series a report will be issued by the Bureau of

posures. The fire effects on neighboring detached buildings from the burning of an adjacent building can generally be taken as less severe due to the shielding effects of the walls of the burning building, particularly where of fire-resistive construction, and less opportunity for high temperatures to build up in the unconfined space between them.

S. H. INGBERG,

October 15, 1923.

Bureau of Standards, Washington, D. C.

PEAT MEETING AT WASHINGTON.

THE 17TH ANNUAL convention of the American Peat Society will be held at Washington, D. C., December 6-7-8th. The preliminary announcement indicates that there will be some exhibits as well as a number of special talks. Also some advertising space will be offered on the program. Those interested should write James H. Beattie, at McLean, Va.

Signs of Progress and Prosperity



30" x 12"



30" x 12"



30 x 12"

These signs afford the very best means of local advertising

The real signs (the above are miniatures) are each 12 by 30 inches and are weather proof and sun proof. There is a blank space left on each sign in which to print the name and address of the firm or other matter desired

Read the following page, figure up the number you can use in your immediate vicinity and get prices which depends on the quantity used.

The Clay-Worker,

BOOSTING CLAY PRODUCTS.

WHEN THE DULL SEASON approaches and building operations begin to slacken, when the orders on hand are not sufficient to keep up with the production end of the business, then is the time to start a boosting campaign that will instill into the hearts of the buying public the desire to use clay products.

It is well to keep continually before the prospective buyer the real merits of your product, but it is especially necessary during this time of the year, now that a presidential year looms ahead of us with its habitual prophecy of uncertain business, to set forth a nationwide movement that will gather momentum as the days go by until the people the nation over are discussing the proposition in the office, at the fireside, in the clubs and on the thoroughfares.

What a wonderful opportunity is before the clay products industry, all that is needed is universal co-operation on the part of manufacturers.

NINE YEARS AGO The Clay-Worker originated and put across with the aid of the wide awake manufacturers the "Build with Brick" movement which made the people from the Atlantic to the Pacific and from the Great Lakes to the Gulf sit up and take notice. Even the foreign countries such as Norway, Sweden, Holland and others took up with the proposition so that the movement was world wide.

The slogan, "Build with Brick," is still being used extensively but the effect today is scattering and confusing because of lack of uniform boosting and also lack of uniform adaptation of the idea.

It is time to revive the movement and put it on with more force and universal cooperation; the harvest reaped by the industry from the old campaign has not ended, but there are only a few scattering shocks left to gather in. It is now time to plant the seed for another big harvest, and the best seeds possible here in this fertile land of ours, are contained in the slogans, "Build with Brick," "Pave with Brick" and "Drain Your Farm."

TO MAKE THE SLOGAN attractive and to get the people to talking and thinking in terms of clay products, we have prepared a new set of signs, better in every way, more durable, water-proof, weather-proof and easier to handle than the old ones, and we are asking the manufacturers to do their part in making this campaign of benefit to all.

Supposing you were taking a trip by train or automobile and you were confronted on every hand by the red, white and black signs bearing the slogan of the clay product manufacturer. Wouldn't that start you to thinking and talking seriously about the proposition? The cost to the individual product manufac-

turer will be insignificant. Several hundred signs purchased by each of the 5,000 manufacturers and scattered over the various territories would decorate the highways and by-ways with the slogans.

We believe the manufacturers are ready to back such a campaign and since we have already secured the pledges of quite a number of the large manufacturers to back up this movement in every way pos-

A CLAY PRODUCT WEEK

In connection with the Build with Brick campaign The Clay-Worker advocates a clay products week. A certain week in each year, definitely determined upon by joint action of the various organizations and clay clubs or local associations as a week in which special effort will be made annually by all individuals and all organizations in the ceramic industry to boost their product. This will mean individual effort at boosting individual business in local territory but with everyone boosting his business at the same time and in the same manner with similar displays and slogans as all others in the industry, what a world of comment it will create, what a mighty boost for clay products with the resultant increase in demand.

We believe fire prevention week is a good week to put across such a nation wide campaign of publicity. It is a long ways ahead but time is needed to give all organizations and individuals a chance to thoroughly attune themselves with this idea. It matters little to us what week is selected but the idea should be cultivated now that it is planted. We therefore ask the various organizations in the clay industry to carefully consider this suggestion at their annual meetings and we urge that a special committee be appointed by each association and that at some near future date these committees be brought together at some central point where boosting plans and the proper week for a nation wide co-operative movement can be determined upon.

sible we are setting about to make this a universal co-operative campaign.

IN ORDER that we may all work to one purpose and make one big effort in a timely uniform manner, we are urging every state organization, every local club, every individual firm to make this Build with Brick Campaign a chief part of their year's work.

We are urging all organizations to make an earnest effort to boost for all they are worth, urge upon their members to use the signs, carry advertisements in the local papers, have prize school competitions on the subject, "Why Build with Brick," and in every way possible put the idea over.

The least any manufacturer can do is to get the signs and cover his immediate territory with them. Put them in the office windows, on trucks, wagons, telephone poles, buildings being wrecked, buildings under construction and every place wherein or whereon they will attract the eye.

THE PAVING BRICK manufacturer can use the "Pave with Brick" signs along the highways and especially will the slogan be effective where mud holes and bad conditions of the roads prevail.

The drain tile manufacturer can use the "Drain Your Farm" sign very effectively by placing same on barns and on fences where the farmers will read them and afterwards talk the thing over around the fireside.

All the various clay product manufacturers should use similar signs of uniform size and color to make the campaign nation wide. Everyone doing his part now will make the countrysides blossom, so to speak, over night, and the whole nation will be awakened to the fact that the clay products industry has something of real value to tell them and sell them.

You can have your firm name printed on the signs and it will be a year-round advertisement because of the durability of the new signs, which are made of fibre board with folded edges and printed with sun-proof and weather-proof ink.

The miniature views in the colored supplement appearing in this issue gives you an idea of the beauty and attractiveness of the large signs which are 30 inches long and 12 inches high.

Place your order early so that the factory can have sufficient time for properly imprinting of your name on each one.

The cost of these signs will of course depend on the quantity ordered. They are comparatively inexpensive and afford an unequalled means of advertising locally that should appeal to every manufacturer the country over. For sample signs and prices, address The Clay-Worker.

BRICK HOMES.

ONE OF THE most cheering signs of the times is in the pictorial showings found here and there of new homes that are real homes and are built with brick. Two of these encouraging examples were found in **Material Facts**, the house organ of the Cleveland Builders Supply & Brick Co., recently, one being the home of Mr. Joseph Laronge at the corner of Colchester and Coventry Roads, Cleveland. This is Dutch colonial with mingled brick tones. Another is the home of Mr. Dave Strickland of the Wellington Machine Co., Wellington, Ohio, located at 2121 Overbrook avenue, Lakewood, Ohio.

BUILD WITH BRICK—A REVIVAL.

THE SLOGAN "BUILD WITH BRICK" is to the brick industry even more than the slogan "Save the Surface and You Save All" is to the paint industry, yet we have been a bit negligent about our use of it so that now there is need for a revival.

Without any reflection on the quality or effectiveness of other advertising, it is a fact that the best advertising ever done by the brick industry was in that campaign of individual advertising put on some years ago with the feature slogan "Build With Brick." It was so good that it should have been kept up, and there should be "Build With Brick" signs all over the country today. Perhaps the war helped us to get away from it, and we have been so busy with other things the past few years that we have not taken it up again. Now is a good time to turn again to our "Build With Brick" slogan and poster idea and have a revival.

And that we may get started right and with a good understanding, as well as enthusiasm, a bit of historical review of some of the past efforts is in order.

A Bit of History.

The first big campaign for the "Build With Brick" posters was started by THE CLAY-WORKER in May, 1914, and there followed a series of articles and reproductions of suggestive posters which met a hearty response throughout the country, and pretty soon others were tacking up "Build With Brick" signs everywhere, and some were building some very elaborate panels and hanging out striking electric signs carrying the words.

There is an interesting scrap of history though even back of that. About a year more or less before the launching of the first big campaign there was editorial mention in THE CLAY-WORKER that a good catch line for local advertising could be made with three words, "Build With Brick," because they have both euphony and directness of purpose to make an impression when conspicuously displayed.

Down at Evansville, John Andres, of the Standard Brick & Manufacturing Company, who is one of the most wide-awake advertisers of brick this country has produced, and is always looking for something new along this line, caught the idea of using the words "Build With Brick," and immediately commenced to display it in their advertising.

A Day Dream Vision.

This fact and the appeal of the catch line was discussed with the writer during a visit down there subsequently, following which the writer, who is given to dreaming day dreams upon occasion, fell to meditating upon this subject, to day dreaming, if you will, and finally saw a vision. In this vision there were these three words, "Build With Brick" staring the people in the face in all manner of ways and in all parts of the country, from Canada to Mexico and from Maine to California, tacked up in the form of posters, not only along the roadways of the country, but also along the railway lines, so that, during the year 1915, one going from New York to the Panama-Pacific Exposition would see these three words staring him in the face all the way along the line from every state in the Union. In this vision they were also seen in street car signs, moving picture shows and flaring out in big cities in electric lights, flashing by in car signs on railway trains, and somewhere, some way, there was in sight all the time, in big conspicuous letters, the injunction to "Build With Brick." In this vision not only were there the visible signs, but there was a suggestion of music—of bands playing a tune called "Build With Brick,"

and an enthusiastic vocal rendering of it at future N. B. M. A. banquets.

Rekindled Fires.

It was this vision, which can be but dimly pictured in words now, that led to the campaign for the "Build With Brick" posters. It is one thing, however, to have a dream and see a vision, and quite another and different thing to make it come true, to make it real. Dreams are made to come true at times, but often when one begins the task of making a vision into a reality it is much like trying to kindle a fire among the dead ashes in the cold gray dawn of the morning. People do manage to kindle fires among the dead ashes in the gray dawn, however, and warm things up. Moreover, enthusiasm can be aroused by persistent effort even when the first fires of inspiration have died down.

It took some hard plugging and persistent work, in which all the force of THE CLAY-WORKER figuratively rolled up their sleeves and went after it, to get the fires kindled under the "Build With Brick" idea, but by and by we got it started and it kept growing and spreading till it made new and effective showing and resulted in the biggest boost for brick and other clay products ever put over and at the smallest cost. It not only put fresh life and enthusiasm into brick manufacturers the country over, but it awakened a spirit of exploitation which perhaps led directly to most all of the great publicity efforts that have followed. The big basic idea back of it all was for each man in his own surroundings, and groups of men in each given community, to provide themselves with "Build With Brick" posters and tack them up along the highways and by ways and spread them out in town so that anywhere anyone might be driving along a public way he would not go far until he would see a sign saying "Build With Brick." And it did spread, too, till "Build With Brick" signs were confronting travelers and everyday home folks all over the country and making an impression.

Now, then, let us rekindle these fires of enthusiasm in active individual exploitation by using the poster sign "Build With Brick," and let us seek to make it more effective by concerted action in a way that will give the revival as big a punch as was gotten out of the original campaign.

A Follow-up Idea.

Let us visualize along with the thought of again hanging out a "Build With Brick" sign all over the country, the idea of getting a follow-up in the form of talks in which men who are members of luncheon clubs throughout the country all may get in a word simultaneously. That is, when we get the campaign under way, let us set some week in which all the brick men throughout the country who are members of Rotary, Kiwanis, Optimist and other luncheon clubs will arrange for a place on the program at the meeting of their club that week, so that they may put in a few minutes telling about the "Build With Brick" slogan, and explaining why the brick manufacturers advocate building with brick.

This is looking ahead a little, but it is visualizing what is before us that gives us enthusiasm for effort, and which ought to help encourage all of us to get busy in the first work of a revival of the "Build With Brick" poster by arranging to get a supply of posters and get ready to make a good showing with them locally. Let us get to work at this part of it, and then we will develop details as we go along and data for a series of specific talks on why we should "Build With Brick." The first objective, however, is to sell ourselves on the idea of putting on a revival campaign of the poster slogan "Build With Brick."

MORTAR COLOR—ITS USE AND ABUSE.

By Frank C. Bogk, President of Ricketson Mineral Paint Works, Milwaukee, Wis.

AS THE TINY CARAVELS of Columbus were later succeeded by the larger sailing ships, and they in turn by the modern oil-burning Leviathans, so in building construction, advancement and progress has been made as well.

It was not so many years ago that when the specifications called for a colored mortar joint, only the paste product was thought of, for the good and sufficient reason that it was the only available material for the purpose. But as the modern auto has almost supplanted the horse-drawn vehicle, so has the mortar color in dry form supplanted the paste product.

It is the exceptional case today to have the paste form used. Architects who are in step with modern progress are now specifying one of the several standard dry colors on the market. Dealers, too, in most cases prefer the dry color for many reasons. The principal one, perhaps, is that it costs less and at the reduced price at which any of the good dry colors can be purchased, the colored joint does not add materially to the cost of the building, yet the brick is framed by a fitting tone and both architect and contractor's work stands out, a lasting tribute to their labor.

Secondly: Dealers, too, have learned that the paste color means they are obliged to pay the freight on the moisture. If any moisture is added they have learned they can do that just as well themselves and so the dry colors, excepting in isolated cases, are now called for when a reliable, non-fading weather-proof joint is demanded.

Nor does the dry color "cake" and deteriorate under changing climatic conditions. The dry colors never lose their coloring strength, whether bag or barrel is open or closed for any length of time.

(The second and concluding article on "Mortar Color—Its Use and Abuse," will appear in the next issue of THE CLAY-WORKER.)

NEW JERSEY CLAYWORKERS PLAN ANNUAL MEETING.

THE EXECUTIVE Committee of the New Jersey Clayworkers' Association and Eastern Section of the American Ceramic Society held a meeting at the residence of Charles A. Bloomfield, Metuchen, N. J., councilor for the organization, on Friday, October 26, and arranged preliminary plans for the annual convention. It was voted to hold this meeting at the Ceramics Building, Rutgers College, New Brunswick, N. J., on Wednesday, December 19, with morning and afternoon sessions; a luncheon will be served in the building. A program committee was appointed, consisting of Fred A. Whitaker, General Ceramics Company, Keasbey, N. J.; D. P. Forst, Robertson Art Tile Company, Morrisville, Pa., and Leslie Brown, Lenox, Inc., Trenton. It is expected to have a number of interesting technical papers presented, as well as a practical discussion of important topics pertaining to plant operations, and Professor George H. Brown, director of the Department of Ceramics at Rutgers College and secretary of the association, will assist the committee in this phase of the program.

During the Executive Committee meeting, additional contributions were received for the ceramic department at the college to defray expenses in connection with the erection of the building a number of months ago, these being from August Staudt, president of the Perth Amboy Tile Works, Perth Amboy, N. J., for \$100, and from Mr. Bloomfield for \$50. Tentative plans were also developed at the gathering for committee work for the forthcoming annual convention of the American Ceramic Society, to be held at Atlantic City next February.

ANNUAL MEETING OF THE AMERICAN FACE BRICK
ASSOCIATION, TO BE HELD AT FRENCH LICK
SPRINGS, IND., DEC. 4-5-6, 1923.

AS PREVIOUSLY announced in The Clay-Worker, the twelfth annual meeting of the American Face Brick Association will again be held at the home of Pluto. The occasion will be a happy blending of work and play. The advantage of meeting at French Lick is that convention sessions are held with no interruption due to other attractions. The Association work is paramount, but when the sessions are ended there is ample time for the best of entertainment in the way of outdoor sports. The lovers of golf are afforded

their distributors, it is planned to eliminate the afternoon session on the second day. The meeting will therefore consist of three sessions, the first starting at 3 o'clock Tuesday, December 4th, and the other two sessions at 10 o'clock Wednesday and Thursday. The program will be built largely around the question of distribution and its various phases.

Of course there will be various committee reports, such as Technical Research, Standard Sizes, Publicity, Trade Ethics, etc., etc. It is anticipated that Dr. G. C. Mars will have an exceptionally interesting report on his recent observations abroad. This one feature will repay for time and trouble incident to the convention trip.

The passenger associations have granted special round trip



The Home
of Pluto
the Famous
Spring Where
Delegates
Gather to
Drink of
the Health-
Giving Water.

First Tee
Where Golfers
Start Out
on Their
Daily Round.
The Course
Is One of
the Finest
in the Land.



the best of sport, and to those who prefer it, equestrian delights can be enjoyed, morning and evening.

The baths at French Lick are unsurpassed anywhere, and after one has had a good soak, a rub down and a plunge, the spacious lobbies with lounges and luxurious equipment, adds to the enjoyment, comfort and peace of mind which conduces to real rejuvenation. The excellent music and social atmosphere that dominates Mr. Taggart's hostelry dissipates that tired feeling and revives the youthful spirit even of the jaded business man. That is why French Lick Springs is favored by so many for conventions and conferences.

Secretary Hollowell writes that in order to give the members more time for fresh air exercise and conferences with

all-year tourist fares from many of the principal cities. Full particulars in regard to same can be had from local railway ticket agents.

A large attendance is anticipated, and it is a wise plan to make reservations early. It is anticipated, though, that the ample accommodations at French Lick Hotel insure comfort and satisfaction of every delegate. For reservations address the French Lick Springs Hotel, as per ad. on Page 423 of this issue.

Genius helps a lot, but it is persistent plugging with common sense as a guide that keeps the wheels of industry going regular.

OIL FIRING CLAY PRODUCTS

By W. D. Richardson.

Part 3.

HAVING DECIDED UPON the method of atomizing the oil and the manner of supplying the liquid fuel to the burners and the pressure of the oil, steam or air, the whole system should be carefully laid out on paper before beginning work on the installation. In many cases these plans can be made by some one at the plant, with the help of the regulations of the National Board of Fire Underwriters and the makers of the equipment to be used. In most cases, however, it will pay to employ an expert in this line to lay out the system and look after the installation. A ceramic engineer that has had experience in oil firing should be able to give such assistance in the installation and in the burning of the first kiln as would prevent mistakes and insure positive results from the start.

A modern oil-burning installation suitable for ceramic kilns consists of the following equipment: Storage tanks, strainers, oil-level gages, pumps, piping, fittings and valves, meters, heaters, pressure gages, thermometers and oil burners.

Storage Tanks.

Where fuel oil is received from the refinery in tank cars, sufficient storage should be provided to insure steady operation and so that cars coming in can be unloaded promptly without demurrage charges. The distance from the supply and the amount of fuel to be used daily will govern the size of the storage installation. Where the amount of oil stored need not be large, cylindrical steel tankss, below the ground and below the level of railroad track and factory, are generally used. Where large storage is required, concrete tanks are found to be satisfactory, especially with the heavy oils. Generally a moderate sized plant should have storage capacity for 50,000 gallons and a large plant for 100,000 gallons up.

The oil should flow by gravity from the cars to the storage tanks. In cold weather with light oils and at all times with heavy oils, it is necessary to heat the oil in the car to make it flow freely. Tank cars are generally provided with steam coils, and arrangement should be made for steam connection near the railroad siding where the cars are unloaded. The standard outlet from cars is 2½ in. pipe. Suitable piping must be provided to carry oil from cars to storage tank, with flexible oil hose for connection to tank.

Detail specifications for construction of storage tanks will be furnished by the oil companies. The U. S. Bureau of Mines has also issued a bulletin on the subject, Oil Storage Tanks and Reservoirs, Bulletin 155, which can be obtained by sending 25c to the Superintendent of Documents, Government Printing Office, Washington.

Detailed instructions for installing the storage tanks and arranging handling appliances and piping systems are furnished by the National Board of Fire Underwriters and can be obtained, together with state and local regulations, from any insurance company.

Before starting to unload a car of oil, the water should be drawn off from the bottom of the car.

Strainers.

All fuel oils carry a certain amount of foreign matter in suspension. To remove such matter efficient strainers should be installed. First, it is well to have an open strainer through which the oil must pass to enter storage tank. There should also be a strainer on the suction line between storage tank

and pump and again between pump and heater and then the finest strainer between heater and burners. These strainers should be in duplicate, in parallel, so that one may always be clean.

Heaters.

Fuel oil is so heavy and viscous that it will not flow freely without heating. Oil is usually heated by steam. The specific heat of fuel oil is only about one-half that of water, hence very little steam is required.

The first heater is usually placed at the mouth of the outlet pipe near bottom of storage tank. It is not necessary to heat all of the oil in the storage tank. A steam coil near the outlet, often enclosed in a steel chamber, will be sufficient. The continuous circulating system, with the return of the excess oil, helps to heat the oil in the storage tank.

Near the kiln is a special heater for heating to within a



Fig. 5—Oil Heater.

few degrees of vaporization, generally between 150 and 180 degrees F. Such an oil heater, made by Tate-Jones & Co., Pittsburgh, is shown in Fig. 5. The heater is provided with a steam trap on the steam exhaust to remove condensations. Where live steam is used, as should generally be the case, the exhaust can be used in heating the oil in storage tank.

Unless the oil is heated to a temperature approaching its flash point before admission to burners, the atomization is apt to be incomplete. Moreover, if the temperature of the oil is fluctuating the flame will not be steady and will require frequent adjustment.

Piping.

The pipes and fittings are standard or extra heavy to suit the pressure to be carried and should conform to Fire Underwriter regulations. Long oil pipes from storage tanks are kept warm by running the steam lines parallel and in same trench or conduit. A good plan is to wrap together

or encase in tile or non-conducting covering the oil supply pipe, the steam pipe and the return oil pipe. All joints should be made with a mixture of litharge and glycerine. The pipe lines should drain themselves when the system is shut down.

Oil Meter

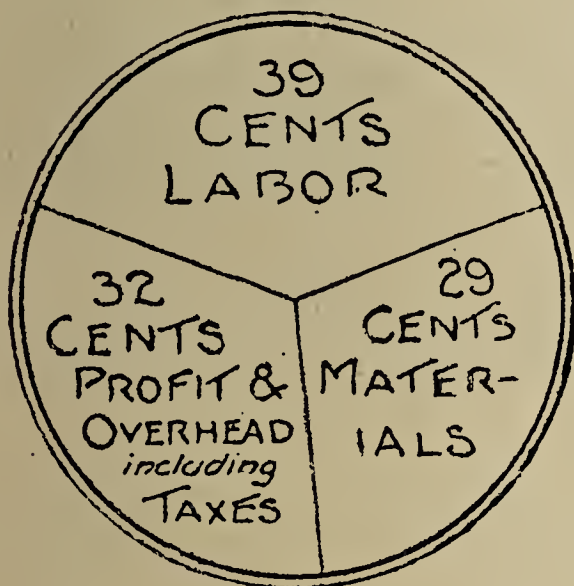
An oil meter is located on the system as a check on other methods of measuring consumption of oil. This is of special design adapted to the temperature of the oil and its sulphur content, and should be calibrated for the average flow through it.

(To be continued.)

CHARTING THE BRICK DOLLAR.

CHARTING the customers' dollar is a favorite pastime of publicity men these days, that is making a graphic circular chart showing what the dollar spent for any given commodity goes for. The usual division is into materials, labor, overhead and distribution cost. Working on this basis a recent charting of the brick dollar by Ralph F. Couch, in a series of short newspaper articles, shows that 39 cents goes for labor, 29 cents for material, and 32 cents for overhead and taxes and profit. Evidently materials in here include the fuel as well as the raw material for brick, and though the accounting may be based on official government statistics it

Brick



is not clear enough in the matter of cost division, because there is not included the item of freight and delivery cost, nor a division which will show sales cost, or what would be reasonable interest on the investment and plants. It demonstrates very clearly, however, that labor cost is an important factor in the making of brick. Indeed, it is probable that in many brick plants the labor item will represent at least 50 per cent in the total cost. It may help some if the brick men who read this will study the percentage charting here and then compile a set of figures from their own records to see how they vary from the published showing.

STOKER BULLETIN.

A NEW and splendid bulletin illustrating and describing their new model design of underfeed stokers, and giving new and interesting light on the subject of fuel economy and better combustion in boiler furnaces, has been issued by the Westinghouse Electric Manufacturing Company.

"WHEN WINTER COMES."

WHEN WINTER COMES must we hibernate, or can we hustle? That is the leading question with the clay-working industry today. There is a hard drive on to keep building operations going on right through the winter months. And though there are handicaps and it is more difficult, there is evidence that we are making encouraging progress with the idea of more active winter building.

This should naturally encourage clayworkers to undertake more winter activity themselves. That they may not only supply the growing winter consumption of building material, but also that they may have provided ahead of needs a good stock of material for spring. This will not only make for increased yearly capacity, but it will help furnish employment for workers in the clay plants all the year round, and it will help reduce the overhead burden by distributing it equally throughout the year.

It has been a common practice of the industry to spend the midwinter months in making alterations, repairs and additions and improvements, so as to be in better shape for the spring season. And the winter still remains a good time for this overhauling work. But surely time can be found for this, even though there is a general effort to carry on with clayworking throughout the winter. There is generally an end of the year shutdown for inventory, and if plans have been made in advance and machinery and repairs bought and gotten in ready, changes and alterations can be made without any long interruption to the work. So let us see what we can do this winter toward keeping things moving, instead of going into winter quarters and hibernating.

TWENTY-SECOND ANNUAL CONVENTION CANADIAN NATIONAL CLAY PRODUCTS ASSOCIATION.

To Be Held at Toronto, Ontario, February 13 and 14, 1924.

A TWO-DAY CONVENTION is planned for the Canadian Brick and Tile Manufacturers and will occur Wednesday and Thursday, February 13 and 14, 1924, at the Prince George Hotel, Toronto, Ontario. This is a little later date than is usually selected by the C. N. C. P. A., and was chosen out of kindly consideration for the National Brick Manufacturers' Association of the United States, in order to enable the members of each association to attend both conventions. It goes without saying that an interesting program is in course of preparation. It is in charge of H. F. Dingledine, superintendent of the National Fireproofing Co. of Canada, Ltd., Aldershot, Can., and will be given in full in a later announcement.

Friday will be side-trip day and those so desiring will be given an opportunity of visiting the clay plants or other points of interest in and about Toronto under the personal direction of the executive officers of the association.

A large attendance is anticipated. Canadian manufacturers have had a busy and prosperous season and with the prospect of a steadily increasing business, the members will, when possible, take advantage of the opportunity to again meet together and give consideration to all matters of interest to the trade. Secretary Gordon C. Keith, 51 Wellington St., West, Toronto, will gladly give additional information. Clayworkers of the United States are always welcome at these meetings.

The Editor of The Clay-Worker Honored.

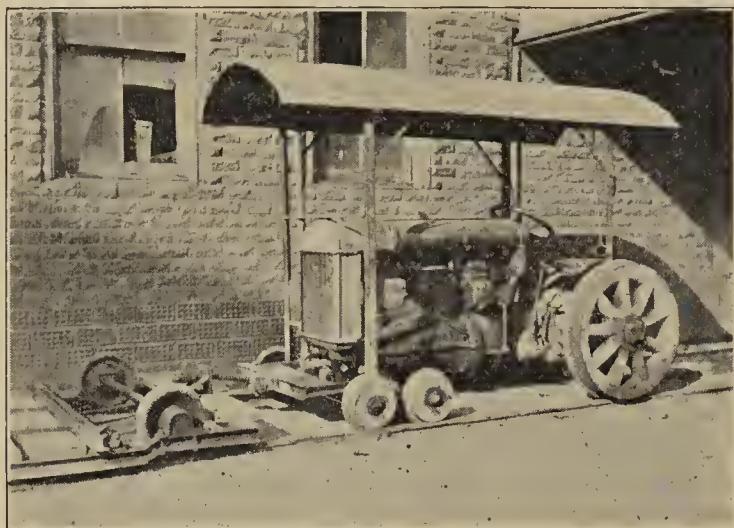
Theodore A. Randall, secretary of the N. B. M. A., has been made an honorary life member of the Canadian National Clay Products Association and will be decorated appropriately at the next convention. This high honor is in recognition of Mr. Randall's interest in and services to the Canadian Association in years past.

CLAY KINKS.

Mechanical Transfer.

ALTHOUGH IT HAS come to be looked upon as a prime necessity in yards of large capacity, of recent years plants of somewhat smaller output are considering the advisability of mechanical transfer system, as offering promise of betterment from various angles of economy.

Many of these smaller plants, however, in considering an installation of this sort are confronted with the obstacles of installation costs and the problem of suitable power for operating the system, electricity until recently being considered about the most satisfactory means of propulsion.



Fordson Traction Locomotive at Plant of Veedersburg Paver Company.

Many hybrid and cumbersome attempts have been made in the past in efforts to utilize the power of the internal combustion engine for this purpose, and the ungainly creations to be seen on some yards throughout the land provoke a scream, to be most charitable in the matter.

When Henry's son introduced his neat little tractor somewhat recently, he perhaps had little idea of the wide range of utility a receptive public was ready to allot to his ingenious little machine of burden. For instance, do you suppose he anticipated that our clayworking craft would welcome it as a long-lost brother and put it to work forthwith, supplanting some of the very important tasks of labor about their plants?

By a very simple change in the running gears of this tractor we find it transformed into about as effective and economical a little locomotive for all-around plant work, either yard or clay pit, as one would care to own. The driving wheels are of the flanged, steam locomotive type of 33-inch diameter, and the pivoted four-wheel truck at the front end enables it to negotiate curves of rather small radius, if such service be required.

Adequate power is available for handling the transfer work on the average yard up to 100,000 brick basis per day, and the variable speed range enables this work to be done with ease and dispatch. At the well-known plant of the Veedersburg Paver Company, Veedersburgh, Ind., of which A. H. Bauer, St. Louis, Mo., is president, and L. A. Culver, of Veedersburgh, is general manager, we observed an excellent example of this style of equipment as shown in the accompanying illustration and were told that it met their every requirement nicely in their operations on ten-pound shale paving block up to 60,000 per day, handled to their

thirty round down-draft kilns arranged in double row along their 500-foot transfer track.

The transfer car is attached to the tractor with a spring coupling arrangement to prevent the possibility of shock at starting and stopping.

Operating costs, including maintenance depreciation, are well within the means of even much smaller yards than the above. Our observation of the operation of this equipment leads us to believe that yards of 40,000 capacity, and in some instances even as low as 30,000 daily capacity, would find this machine a profitable investment.

At the above plant we were informed that their daily consumption of gas and oil and all legitimate repair items, with the depreciation charge, based upon a conservative life of the machine at ten years, effected a saving of expense equal to the labor cost of two workmen.

Almost any handy man (or boy of 17 to 21) can quickly master the operation, and look after the current repairs,



Railroad Incline. Note Hollow Tile and Brick Construction.

and altogether it affords a moderate priced and very efficient piece of equipment for all-around clay plant service.

Elevated Trackway.

Around clayworking plants and in fact at manufacturing plants in general, it often becomes advisable for storage, or other purposes, to elevate railroad tracks to varying heights. Where height makes ground space a factor, and sightliness is of some concern, trestling is usually resorted to. Whether this consists of either masonry piers or timber bents, the usual spanning stringers of wood afford a constant source of deterioration and high depreciation, to say nothing of the attending annoyance and worry in the meantime.

Having had more or less experience and trouble with timber trestling in the past, the Veedersburg Paver Company in 1914, upon opening up a new deposit of shale, calling for the utilization of standard railroad equipment in handling same to the plant, were put to the necessity of constructing a suitable incline storage track for the gravity handling of their raw material through their grinding department.

There was a discarded pile of cull 6x12x12-inch load-bearing hollow tile with one-inch walls standing under the edge of the cinder dump and soon to be buried forever. These seemed to suggest themselves for the purpose, and were utilized, being laid up stretcher fashion, into two parallel straight walls six feet apart inside measurement and eight feet outside. These walls started at the height of five feet and on a 200-foot reach had attained a height of about fifteen feet, due partially to the downward or receding slope of

the ground at this point. These walls were capped with a soldier course of the same hollow tile, and the open ducts were filled with cement grout flush with the top.

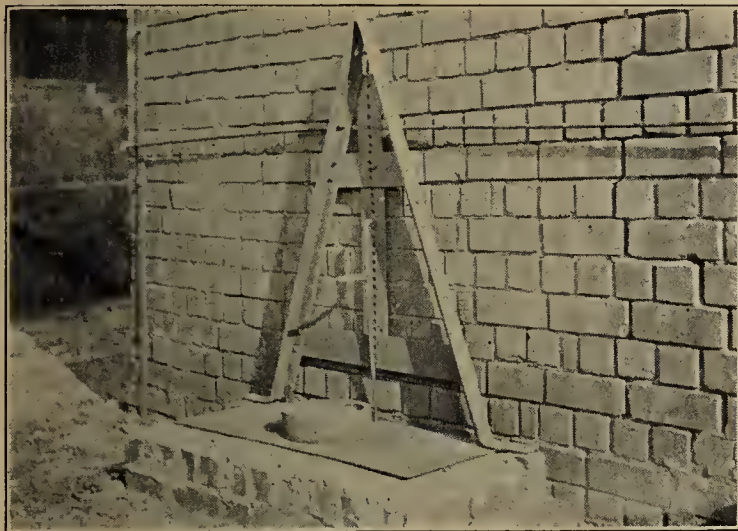
Midway between ground and top of wall, at the higher reach of same, a row of one-inch stay rods had been introduced to prevent spreading of the walls. The space between the walls was then filled with ordinary kiln cinders, and the next step was the laying of the railway ties on top of the cinder filling and the spiking down of the rails.

A suitable runway mounted on brick piers alongside of the trestle affords handy means for the attendants in detaching and dropping down each successive car of shale through the factory for unloading, as the company uses the side-dump type of coal car in their service.

Kiln Stack Dampers.

It is rather surprising the number of plants one finds where the stack damper is relegated to an inconspicuous place in the background.

When all the facilities of draft control and standardization of burn, with their possibilities of fuel saving and other economies made possible by intelligent use of this feature of plant equipment are taken into account, one can but



A Convenient and Efficient Kiln Stack Damper.

wonder if this does not present about the most promising field for education and improvement as affecting one of the vitals in clay processing economy.

Here and there, however, one runs across a plant where the operators are devotees of the dampering principle, who have worked out under their particular conditions, its dangers and advantages and the more or less proper control of their drafts to meet the varying conditions of kiln rotation.

We should like to suggest, however, that no dampering system, in our opinion, will show appreciable returns unless properly installed and maintained. At the plant of the Veedersburg Paver Company, we observed an installation of this kind that has been developed into a standardized and exact system, which finds daily and profitable use in their routine, and is reflected in an economy, excellence and standardization of paving brick burning to be observed at but few plants in this country.

As shown in the illustration, on the manhole at the stack is mounted an angle-iron, "A" framework with crows feet for spiking to the top of the wall. A vertical iron strip is suspended from the apex; this flat strip being perforated throughout the greater part of its length by one-half inch holes spaced on one inch centers.

A hanging or suspending rod of one-half inch round iron

is bent at the upper end into a short, right-angle hook for meshing into the holes of the flat strip for any desired and easy adjustment of the damper plate attached to the lower end of the rod. A simple bend of this rod upon itself near the top affords an effective horizontal handle for lifting or lowering the damper.

Set in the sides of the damper shaft and running to the bottom of the smoke flue are sections of discarded railroad rail, sixty pound weight or heavier. The bottom of these rails are set toward and in alignment with the face of the stack, and anchored securely into the side walls, thus presenting the grooved or channeled sides of the rails as an excellent slideway for the vertical movement of the dampers. This is a considerable improvement, we should say, over the customary grooves built in the masonry walls, which under the stresses of expansion and contraction soon pinch and get out of alignment, seriously interfering with the smooth and proper working of the damper.

This plant uses sheet iron dampers of heavy gauge, with a tip piece riveted to the main damper plate for easy and quick repairs when the bottom strip burns off in service.

A sheet iron cover plate, slotted for the lifting rod, and fitted snugly over the manhole completes the outfit.

When the accompanying photograph was taken, this structure had been in use over nine years, and as there is no visible signs of deterioration at any point, it looks good



Cooling Tracks (Ten Car Lengths) at the Discharge End of Waste Heat Dryer.

for a lifetime with practically no repairs excepting the natural deterioration of the wooden ties supporting the rails.

There was some misgiving at the start by the railroad officials as to the load-bearing capacity of these twelve-inch hollow tile walls, as it is common practice to store thereon nine cars heavily loaded with shale, the car and load amounting to 150,000 pounds each, or 1,350,000 pounds for the train.

Cooling Trackage for Dryers.

How many times, summer or winter, would it not have greatly facilitated the drying and setting of our product if a few more car lengths of storage space were available at the discharge or cooling end of the dryer.

Here is one plant where they certainly were long headed, and explains to some extent how they get by with twelve 100-foot waste heat tunnels on a capacity of some 60,000 ten-pound pavers per day, where some other plants which have come under our observation have their troubles with a 50 per cent addition to the above number of tunnels and similar output. These tracks, shown in the illustration, are to be seen at the plant of the Veedersburg Paver Company,

and hold ten standard seven-foot dryer cars each, or a total storage of 120 cars, which represents about 90 per cent of their daily output.

Besides enabling them to operate their dryer to the best advantage by frequent drawings, the comfort to their workmen is of no mean advantage, as cool brick are always available.

True, the trackage in the above dryer parallels the main

kiln transfer track, enabling them to easily effect the above arrangement, but it occurs to the writer that many plants contemplating new dryer installation or even a remodelling of their present equipment could, without great difficulty, incorporate at least a modification of this excellent feature, which is almost certain to pay dividends in the way of increased dryer capacity, a more uniformly dried product going to the kilns, comfort of the setting crews and steadier operations.

Observations of the Streets and Roads of Europe.

By Will P. Blair, Vice-President of the National Paving Brick Manufacturers' Association, Cleveland, Ohio.

Mr. Blair attended the International Road Congress at Seville, Spain, the past summer, as a representative of the National Paving Brick Manufacturers' Association, and his report, which will be published in this and subsequent issues of *The Clay-Worker* will prove very interesting reading. No one is better qualified to compare the roads of Europe with those of our own country than the "Grand Old Man" of the paving brick industry. We will give Mr. Blair's impressions of streets and roads of England, Scotland and Holland in the November and December issues.

THE INTERNATIONAL ROAD CONGRESS.

THE SESSIONS of the International Congress were conducted in French and Spanish, with no English interpreter. This resulted in all the English-speaking engineers who were present assembling together and informally discussing various problems of road building. It so happened that the Belgian and Swedish engineers could speak English, and some of the Norwegians, so that our informal conferences were regarded by all who took part in them as equally valuable as the papers and discussions taking place in the regular Congress.

The proceedings of the regular Congress, however, are to be printed in English and distributed to all attending members. Some of these papers and discussions have been received already, so that eventually we will not only have the benefit of the formal papers, but also benefit derived from the informal conferences held. After a review of the formal papers we may have something further to report.

In and Around the City of Seville.

A block asphalt street was under construction in Seville. The material for the concrete base, gravel and cement, was carried quite a distance from a supply, in small grass baskets holding about a peck, the basket being placed on the top of the head of the workman. The surface of the concrete was finished and the block laid upon it with all the skill and workmanship of the best placing of encaustic tile in our country.

The heavy traffic is borne almost entirely on two-wheel carts drawn by oxen, the light traffic on the backs of donkeys. The heavy traffic consists almost wholly of olives, olive oil, wine and wheat, the lighter traffic being composed of smaller products of the farm and garden, such as eggs, butter, milk and vegetables.

Under prevailing transportation customs with domestic fuel, such as charcoal, sold by the quart from house to house, and the Nanny goat delivering her own milk right up to the door of the customer, with donkeys bearing men on their backs bigger than themselves, any great improvement in transportation facilities need not be expected in Spain for many years to come. How long the oxen will continue to trudge through this city, as well as the beautiful city of Madrid, drawing their two-wheeled cartloads of merchandise, as was done by the Romans 2,000 years ago, one cannot predict.

A very restricted system of national gravel roads is kept

in usable repair for benefits bestowed by tourists. It may be that through this avenue will come reform.

Brick for structural purposes are still used generally in Spain. It would be strange if it were otherwise. Examples of their durability centuries old, by Romans, Arabs and Spaniards in mosques, cathedrals, bridges and viaducts exist as perfectly today as if but a few years in service.

Observations of Roads Through Spain and France, Paris and Vicinity.

The only roads we had an opportunity to observe in the neighborhood of Seville were on the journey that the Congress made some thirty miles out of the city to visit the old fort Italia. The road leading to this place from Seville was the ordinary type of gravel turnpike, such as we are accustomed to in this country. It bore evidence of recent repair, and the general comment of the engineers was that it was for the occasion. Going out, the road was very dusty, but while we were at the fort considerable rainfall occurred, quite sufficient to make the road, on our return, muddy and slippery.

This Roman fort was built 250 years before Christ. It was the headquarters of the southwestern Roman army. The magnitude of the fort is almost beyond description. It is estimated that it accommodated comfortably a half million men, supplied with baths, theaters and every convenience known to that age. The noticeable thing to the eyes of a brick man was that millions of brick were used in the construction of that fort. After the fort was abandoned and during the periods since when no one forbid, thousands upon thousands of brick were hauled away and used in private structures.

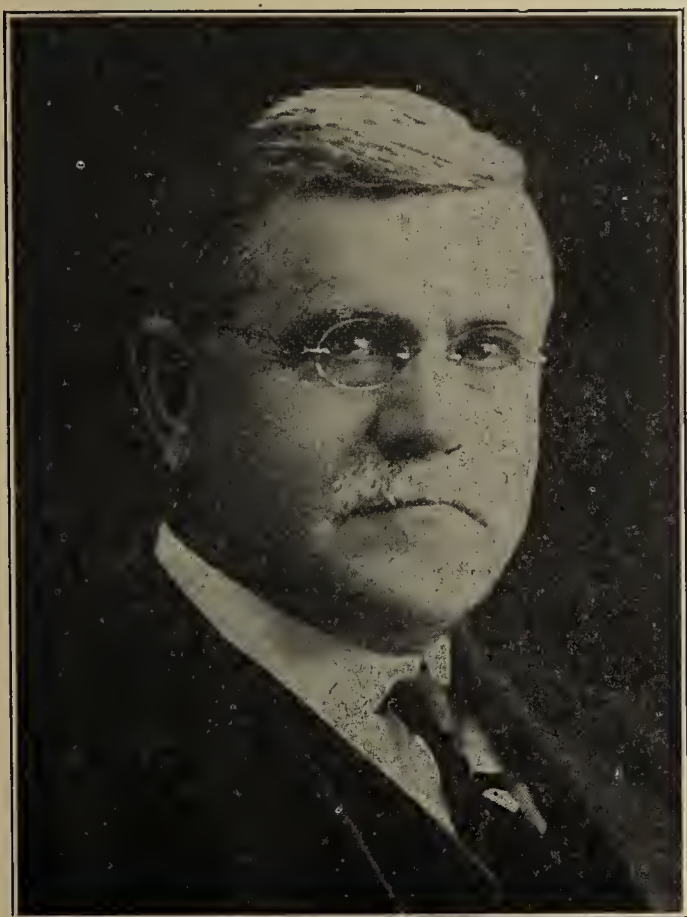
As a part of the program of the International Road Congress, an excursion had been arranged for a visit to Grenada and Cordoba, landing us at Madrid. At Grenada we were entertained by the city and driven over the roads in the vicinity of that city. There were one or two short sections of newly constructed bituminous roads but a few hundred feet in length. The rest of the drive was over ordinary macadam roads, and in that case evidence was very plain that recent repairs had been made for the occasion. Of course, as a part of the program aside from the roads, we were necessarily shown through the Alhambra and the celebrated cathedrals, both in Grenada and Cordoba.

The chief materials of construction in all the old forts, mosques and cathedrals are brick. The character of archi-

itecture represents with great distinction the different sovereignties to which the country was subject—Roman, Arab or Catholic. The Romans built for permanence and comfort, the Arabs or Moors excelled in ceramic ornament, and the Catholics in carvings and paintings.

At Cordoba our road program took us several miles out of the city over a macadam road which climbed the mountains, and from this point of view we witnessed in the vast distance the olive orchards which are the chief pride of Spain as well as the commercial source of the nation's life. The product of these orchards constitutes the general transportation tonnage imposed upon the Spanish roads.

Wherever repair was noticed, it was simply the adding of some more gravel or broken stone, leaving the traffic to do the rest. This seemed to be the universal practice throughout France and Spain as to their gravel and macadam roads. There were many instances observed where the roads were insufficient to comfortably bear this traffic. The thickness



Wm. P. Blair, Cleveland, Ohio.

of the gravel and macadam, it was observed from the trains, was often broken through and great ruts were in evidence. Of course the unimproved portions gave every evidence of their being badly cut up during the rainy season. The ruts were still there.

The transportation of olives and olive oil over the roads is accomplished on the two-wheeled carts drawn by oxen, and this character of conveyance seems to be universal throughout Spain. The carts themselves seem to be exact reproductions of those used in the Roman days.

Our excursion terminated at Madrid. Here the streets were for the greater part of granite, the size of the block being six by twelve inches. The traffic in Madrid was little different in character than that in the country, but increased many times over in volume, a constant stream of carts, some so heavily loaded that three and four yoke of oxen were used. We observed but three or four automobile trucks in Madrid.

On our way from Madrid to Paris the members of the

Congress, during daylight travel, were in constant observance of road conditions. Scarcely a road seemed to be in good repair. Of course they were made exclusively of gravel and broken stone. An extensive examination of the streets of Paris disclosed evident neglect. To restore them to a condition in keeping with the reputation borne before the war will mean a very great deal of reconstruction. Some of this work is already under way. On the great boulevard leading past the Grand Hotel and the Building Magdalena, I took a photograph of the wood block following a rainfall. From its appearance you would scarcely think the street was fit for travel. In fact, most of the streets of Paris are uncomfortable by reason of their worn condition. The outlying streets away from the business center are for the most part ordinary macadam. These, too, are out of repair. I took one photograph of Avenue D'iena, which is of gravel macadam. It was full of chuckholes as far as the eye could reach. We went out one day over the roads reaching to the battlefields surrounding Verdun, and the well-known forts of Vaux and Deaumont. In this region the roads for the most part are new or reconstructed where the route is suitable for present day travel. Most of the roads constructed for military purposes are abandoned, for the reason that their locations are not suitable to peace times.

(To be Continued.)

CONTRACTORS AND ROAD BUILDERS TO MEET IN CHICAGO.

A joint meeting of the Associated General Contractors and the American Road Builders' Association will be held in Chicago on Thursday, January 17, 1924, to discuss various matters of importance to the membership of both organizations. This joint meeting has been made possible by the proximity in dates of the annual meetings of these organizations in Chicago. The 1924 convention of the American Road Builders' Association will be held Tuesday, January 15, to Friday, January 18, inclusive, while the Associated General Contractors meet the following Monday, Tuesday and Wednesday. All the officers, the executive committee and the heads of the twenty-eight chapters of the Associated General Contractors will, however, be in Chicago the previous week. Many of the members of the organization also will be in Chicago that week, attending the convention and road show of the American Road Builders' Association. Plans accordingly have been made for the joint meeting. Details of the program will be announced shortly.

FUEL VALUES.

THE ENGINEERING department of the Bertha Consumers' Co. classifies steam coal under three principal headings. It states that steam coal constitutes more than 50 percent of all coals mined, and covers a wide range in quality and character. For steaming purposes coals may be classified as follows: (1) Locomotive, (2) steamship, (3) those for stationary power plant use.

Large power stations require a coal which will respond quickly to the load which varies greatly, and a coal which will meet the peak demand. Stoker-fired boilers using slack or screenings are to be found in large plants today. Fuel this size avoids the necessity of crushing, and affords practically smokeless operation. Bituminous slack is capable of meeting the sudden changes in load more readily than any other grade of coal, and permits more uniform operation under widely varying plant loads.

The Bertha Consumers Co. furnishes coal for a great many industrial plants. If you desire information in regard to the best coal for a specific purpose you will obtain the information by addressing the Engineering Dept. the Bertha Consumers Co., 1203 Chamber of Commerce, Pittsburgh, Pa. See ad on page 492.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Interested in Klay Kinks.

Editor The Clay-Worker:

I wish to express favorable comment on the October number of The Clay-Worker.

I have seen some splendid copies in the past, but I believe this is the best from point of news pertaining to the clay-worker; also was much interested in the article entitled "The Japanese Disaster." Then the article entitled "Klay Kinks" I wish to speak about in particular.

It is well for every manufacturer, if he has some good device in use in his plant, not to keep it under cover, but spread the good news abroad, as no doubt it would help others who have conditions that these new ideas would improve.

The selection of Cincinnati for the next meeting place for the N. B. M. A. is a splendid one, and I recall with pleasure the meeting of 1904, and hope that we will have a large attendance at the Queen City.

With kindest personal regards to the Randall family, I remain, respectfully yours,

GEORGE M. FRIES.

Connersville, Ind.

An Old Clayworker Forms a New Company.

Editor The Clayworker:

Please find inclosed postal order to pay my subscription. After our plant burned down at Bayview, Wash., I returned to my boyhood home, Demos, Ohio, and have been taking quite a vacation, but I long to get back into the game of clay products. I have wakened up from my slumber and organized a new company at Bethesda, Ohio, which is incorporated under the name of Bethesda Clay Products Co., Gethesda, O., with a capital stock of \$50,000. I have tested the clay and found it to be of the best, for most all kind of clay products.

The officers of the new company are: Dr. D. M. Murphy, president; L. H. Thrall, vice-president; H. P. Loe, secretary and treasurer; C. B. Mayhugh, general manager; directors, C. B. Mayhugh, A. L. Kemp, E. S. McMillen, L. H. Thrall, H. P. Loe, D. W. Murphy.

I have traveled over most of the United States in connection with the clay industry, building, installing and superintending brick plants. I have had fifty years of practical experience commenced while a boy of twelve summers by hand molding. I have handled most all makes of machinery from hand mold up to the latest machine. Well I remember while a boy, far out in the country firing those old scove kilns, by my lonesome self. Yes, I could hear the old hoot owl cry, "Who are you?" not knowing really what it was; thinking it was some wild animal of some kind; and every time I fired the kiln, the firing shovel seemed to make more noise than ever, which worked on my nerves to a certain pitch that I looked almost every moment to meet it face to face. Yes, those were youthful days, when the brick business was in its infancy, and now to the present time I am still found by the side of a burning kiln or somewhere in the yard. I am like a fish out of water when I am not engaged in the manufacture of clay

products, but sooner or later my journey's end will be finished and a younger generation will have to take my place.

Thanking you for your past favors all along the path of life, I remain as ever yours,

C. B. MAYHUGH.

Demos, Ohio.

CORROSION OF DRYER CARS.

AN IMPRESSION is being created that waste heat dryers shorten the life of dryer cars by unusual corrosion. Only recently I saw an advertisement that if a certain paint were used on dryer cars, it would greatly increase the life of the cars, used in waste heat dryers. This statement gives one a wrong impression as to the actual corrosion of dryer cars when used in connection with waste heat.

I am a great believer in paint. Any metal or other material will deteriorate if not painted, whether it is used in a dryer, or whether it is merely exposed to the air and the elements. Wood exposed to the elements will rot if not painted. Our automobiles require painting every so often, iron and steel will rust or corrode if exposed to the air, if not covered with some kind of coating or paint. Paint helps to preserve all materials. The deterioration of the commodities above mentioned is one of nature's peculiarities, but to give the impression that corrosion takes place more readily in waste heat dryers than under other conditions is covering a lot of territory.

There is no good reason why a waste heat dryer should corrode dryer cars any more than any other dryer, or even as much as any other dryer. Radiated heat dryers, in their present form, perhaps destroy dryer cars to a much greater extent than any type of dryer on the market, and there is a reason for it. I have also seen waste heat dryers, which are improperly designed and operated, cause undue corrosion, but if either kind of a dryer is properly designed and operated, no corrosion of cars should take place.

In the case of a waste heat dryer, an analysis will show that if the heat from a kiln is drawn after the burning has stopped, there is nothing in this air to cause corrosion. If the circulation in the dryer is properly proportioned, and the dryer properly handled, there is no reason why there should be any unnecessary corrosion. There will be no sulphur in this air, even though there may be some gases hanging in the kiln from the last burn, but the first pass of outside air through the kiln will remove it.

I have had cases, however, where fuel in the fire boxes was allowed to smoulder during the period of drawing waste heat, and the circulation, of course, kept these embers of fuel alive, and the gases given off by these smouldering embers passed through the dryer tunnels. This condition should not exist if proper care is taken in the operation of the system, nor should the moisture be allowed to hang in the waste heat dryer, especially at the entry end of the tunnels.

On the other hand, take a radiated heat dryer, as they are commonly built, and which carries its gases of combustion in a flue under the tracks. This flue, as well as the fire boxes in which combustion takes place, is usually built of brick.

Brick work heated up by the fires in the furnace, and by the gases in the flue under the tracks, is bound to open up and crack, allowing these gases to come in contact with the moisture in the dryer tunnel, and the sulphur in the gases of combustion combines with the moisture in the dryer tunnel, forming an ingredient which is hard on all metals, especially steel.

My observation has shown dryer cars in Trautwein Dryers to be in as good condition, wear and tear excepted, after ten years of operation as they were on the day of the installation. However, I believe metal should be painted, to preserve its life, wherever it is used, but I wish to correct the impression given, that there is an unusual amount of corrosion of equipment caused by the drying of brick in waste heat dryers.

J. O. Trautwein.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



THE FIRST THOUGHT about rebuilding after the terrible Japanese disaster was that there would be an excessive demand for American lumber. And that will doubtless prove true. For rapid and temporary rebuilding the Japanese will doubtless again build of wood. And they will build more of wood for the reason that their processes of brick and clay production are for the most part still very crude. They are small scale operations. To create the material that goes into one of our great skyscrapers would be for them a Herculean job. They will develop, of course. But for the present they are going to need considerable quantities of clay products from the Pacific coast. For it is reasonably certain that much of the business portions of the destroyed area will begin to be built of safer and more enduring materials. Already, before the disaster, the Gladding McBean Company had shipped across the materials necessary for one of Japan's largest structures; and it is reasonable to suppose that the Jap, as well as the American, will feel the urge to safer construction. "Safety First" is a watchword that he can appreciate as well as ourselves. It is to be remembered in this connection that while the distance is great, water transportation is comparatively cheap.

With the introduction of the drying and tunnel kilns, California yards, many of them, scarcely think of seasons now in connection with clay products. Only the smaller yards, depending on sun drying, count on laying up for the winter. We think of this when we read of plants closing down for the season. And it is to be observed that our neighbor, British Columbia, is in the brick business. The Cranbrook Brick Company gives information to the local press that they have closed down for the season after the most prosperous run in their history. They are expecting another season to spread their market beyond the bounds of the Dominion.

Brick in the Northwest.

Not only is the Northwest well developed in clay products production, but they are trying to rival the rest of the coast in building growth; and we suspect they are more than rivaling the rest of the coast in their patronage of home-produced permanent construction material. The Brick and Tile Delivery Company, in the Hoge building in Seattle, have just received the largest partition tile contract and also the largest common brick contract ever let in that neck o' the woods. The order for partition tile was given by the Grant Smith Company for the new Olympic Hotel. This order also carries with it an order for 2,000,000 common brick. The largest order for common brick, however, has been received from the Sound Construction and Engineering Company. This is for 4,000,000 brick for the new legislative building of the state capitol group. They have large orders also for the St. Peter's hospital at Olympia and the St. Vincent's Home and House of Providence in West Seattle.

Partition and Roof Tile in Demand.

Whether the result of growing precautions against fire or not, there has been a growing demand for partition and roof tile in the bay region. One reason for the demand for partition tile is the building of apartment houses and the desirability of soundproof walls. It was continued shortage in the production of the California Pottery Company that drove the president, F. A. Costello, in company with J. F. Creegan and Amile Hoercher, to visit the plant at Merced the other day. He found them running at full capacity, but got the foreman to try to squeeze in a few more tile each day in an effort to catch up the twelve cars they are behind.

Some new projects are getting under headway in the state, and as California is now in a period of growth, it is pretty safe to say that the projects started now will develop into

substantial institutions. A promising enterprise started last year at Gilroy is the brick plant of C. T. Bolting. After discovering an excellent bed of shale on his mountain ranch, he tried to interest outside capital and failed. So last year he started a fleet of trucks transporting the shale down to a plant near the city, and is now producing 20,000 brick daily, with good market for all he produces.

Another one that is meeting with measurable local success is the Santa Paula Brick and Clay Products Company, at Santa Paula, in Ventura county. They have been running successfully for several weeks, and have prospect of good local demand for everything they can produce. In order to prove they have the goods, the secretary, George A. Anderson, has had their product thoroughly tested and proved that its tensile strength is well above the average. SUNSET.

SHORT COURSE IN CLAYWORKING DEPARTMENT OF U. OF I.

THE UNIVERSITY of Illinois announces a short course in Clayworking and Enameling to be given January 14 to 26, 1924.

The course is designed to meet the requirements of practical men. It will deal with the principles underlying the work of managers, superintendents, foremen, burners and others who may be concerned with the manufacture of ceramic products.

A common school education will suffice as preparation for the course. No fees are required but a contribution of one dollar toward the expense of printing leaflets necessary in certain courses is to be made by each person upon registration.

The course of instruction will include lectures, laboratory work and informal discussions. Besides the members of the staff of the Department of Ceramic Engineering and members of the Engineering and other faculties of the University of Illinois, it is expected that Mr. R. M. Howe, of The Kier Fire Brick Company, Pittsburgh, Pa., formerly of Mellon Institute; Mr. R. R. Danielson, of the U. S. Bureau of Standards and Professor A. S. Watts, head of the Department of Ceramic Engineering of Ohio State University, will assist.

Programs may be had upon application to the Department of Ceramic Engineering, University of Illinois, Urbana, Ill.

CALIFORNIA COMING TO THE FRONT.

A BULLETIN OF THE California Common Brick Association issued at Los Angeles indicates that California is coming to the front rapidly in the matter of brick production as well as being put more conspicuously on the map right now by the coming of the common brick manufacturers convention at Los Angeles. California brick manufacturers have always manifested a breezy and optimistic spirit of enterprise, and now they are producing enough in quantity to be entitled to a conspicuously place among the brick producing sections of the country.

OBITUARY.

MINNEAPOLIS BRICK MANUFACTURER DEAD.

Samuel J. Hewson, northwestern general manager of the Hydraulic Press Brick Company, Minneapolis, Minn., died October 25 at his home in that city. Mr. Hewson was born in Detroit in 1857, and moved to Minnesota in 1879, and in 1887 became associated with the Hydraulic Company, and had continued with that concern until the time of his death. He is survived by his wife and two daughters.

Most all of us hatch out a fair share of new ideas that are good. The trouble is we don't make as good use of them as we should, or pass them on like we should. Correct this trouble by bringing your ideas to the big convention and talk about them with the other fellows at Cincinnati the week of January 28.



Cincinnati's River Front and Sky Line, Viewed From the Kentucky Side.

OFFICIAL ANNOUNCEMENT



THIRTY-EIGHTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION TO BE HELD AT HOTEL GIBSON, CINCINNATI, OHIO, JANUARY 28 TO FEBRUARY 2, 1924.

BACK HOME TO CINCINNATI: Our birthplace is the preference of a large majority of our members as evidenced by the recent letter ballot and for that reason and others, good and sufficient, it has been decided to hold the Thirty-eighth Annual convention of the National Brick Manufacturers' Association in Cincinnati, Ohio, the week beginning Monday, January 28, 1924. The Association was organized in that city in September, 1886, and we have met there but once since then, our eighteenth annual convention in February, 1904. Twenty years is a long span, and surely it is time we were again meeting in the city of our birth.

Reduced Railroad Rates.

Reduced railroad rates have been granted on the certificate plan by the Central Passenger Association and concurred in by the Southeastern Passenger Association, the Southwestern Passenger Association, the Trunk Line Association, the New England Passenger Association and the Eastern Canadian Passenger Association, which covers the entire territory between the Gulf and the Lakes and the Atlantic Coast and the Central West.

This provides for a fare and a half for the round trip, provided there are two hundred and fifty or more certificates, and if each member will take a certificate, there will be no trouble on that score. Certificates should be taken for each fare paid. There is no charge whatever for the certificates but they must be delivered to the secretary on arrival at Cincinnati to be vised by the railroad official there. Tickets may be purchased good going from January 24th to 30th, inclusive, and will be good returning out of Cincinnati up to and including February 6th, 1924. Members should arrange for their going tickets a few days in advance of their intended departure, to insure receipt of proper certificate. A mere receipt for fare paid is not sufficient.

Situated at the crossroads of the country's commerce, Cincinnati is easily reached by a number of important trunk lines; by electric railway, river, and by what is of particular importance to the autoist, a network of excellent highways radiating from Cincinnati to all points of the compass. At Cincinnati the Atlantic-Pacific Highway and the Dixie High-

way converge, in addition to a number of others of lesser importance.

Cincinnati is recognized as the gateway to and from the South, and many years ago was termed by Longfellow, the "Queen City of the West." It has long been noted for its hospitality, culture, civic achievements and commercial and industrial enterprises. As a city, Cincinnati is unique in that it intermingles quaintness, romance, history, art, music and the achievements of culture with aggressive commercial activity and gigantic industrial accomplishment.

Cincinnati is singularly fortunate in that it possesses so many things of interest to the tourist and the man or woman abreast of the times. Whether it is in the humming canyons of the business district or in the peaceful enjoyment of the magnificent vistas viewed from vantage points in the suburbs and parks, one cannot fail but be impressed by the diversity of appeals exercised by the city's many and varied interests.

The week of January 28th has been selected for our convention to enable the members who desire to do so to join the party booked to leave Chicago, Saturday of that week, February 2, for the annual convention of the Common Brick



Cincinnati's Famous Exposition and Music Hall, All Brick.

Manufacturers' Association at Los Angeles a week later. This will accommodate the members who desire to attend both conventions. Those attending the N. B. M. A. meeting at Cincinnati can if they wish leave Cincinnati Friday evening, spend Saturday in Chicago, and then join the happy throng on their way to the Pacific Coast. Those who do so will find the N. B. M. A. meeting at Cincinnati an inspiration for the continued consideration and discussion of the important problems of the industry.

Hotel Headquarters.

Hotel Gibson will be headquarters at Cincinnati, and be it said it is a splendid brick structure elegantly equipped for convention purposes. It has 900 guest rooms, each with a bath, either shower, tub, or combination tub and shower. The rates on the European plan range \$2.50 up per day for single rooms and from \$5.00 up per day for double rooms. Its

splendid facilities insure every comfort and convenience possible for the entertainment of our members. No hotel in the nation offers better accommodations for our purpose. The convention hall is on the floor above the mezzanine floor. The latter looks down on the lobby. The floor above the convention hall, the first guest floor, will be reserved for the "trade missionaries," the machinery and supply dealers, and will afford them quarters unexcelled in any hotel in the land. Reservations on that floor will be made through Secretary Randall. Those desiring rooms for display or headquarters purposes will be accommodated at rates commensurate with the accommodations provided. The able manager, W. E. Hawk, promises to use every effort to insure satisfactory service to our entire membership.

The Hotel Gibson is unsurpassed in equipment. It boasts of one of the largest and most beautiful dining halls extant, christened the Florentine room. It is a marvel of elegance and beauty. The lounge and waiting rooms on the main floor are luxurious and afford a most comfortable place for friendly chats and social gatherings. The gentleman's smoking room is particularly inviting. There need be no dull moments convention week for those who enjoy meeting with old friends



The New Gibson Hotel, Cincinnati, Ohio.

or chatting with new ones. It will be a rare opportunity for the discussion of the present day problems of the craft, with the captains of industry who will gather there for that purpose. The Fountain restaurant in the basement of the Gibson Hotel is a marvel of perfection. The busy man or woman whose time is limited will find here quick service and the best food the market affords at reasonable prices. Of course there are private dining rooms for the convenience of special parties or groups desiring a measure of privacy for conferences, etc. All in all, the N. B. M. A. has never met under more favorable conditions than the Hotel Gibson offers.

The time, the place, and facilities are well chosen. Every brick and tile manufacturer in the land is earnestly invited to come and enjoy a week of business conferences and social pleasures, a rare combination.

Twenty years ago Cincinnati was a city of 300,000 people. Today its population is well over 500,000 and its attractions and places of amusement are innumerable. It affords a fine opportunity to study art in architecture, as many of its great buildings are models of fine brick work. The Glad Hand Committee will be more than pleased to guide the visitors to points of interest in and about the city.

Those desiring information on any phase of the brick industry are requested to advise with the Secretary, Theodore A. Randall, Indianapolis, who will endeavor to include same on the program which will be given in full subsequently. The requisite of membership in the National Association is an interest in the craft and a fee of \$10.00 per annum.

THE EXECUTIVE COMMITTEE,

RUFUS C. BURTON, President.

THEODORE A. RANDALL, Secretary.

AMERICAN CERAMIC SOCIETY DOINGS.

THE AMERICAN CERAMIC SOCIETY with secretarial headquarters at Lord Hall, Ohio State University, Ohio, issued recently in connection with its financial budget for the year a bulletin digest of the societies activities. In addition to publishing the monthly journal of reports and observations and the news of activities generally in ceramic research, it reports a number of committees and an interesting lot of collaborative work with other organizations and with government departments in further research and testing and standardization. There are seven industrial divisions of the American Ceramic Society as follows: art, enamel, glass, heavy clay products, refractories, terra cotta, and white ware. Each of these groups is self managed within the society and have



An Aerial View of the Heart of Cincinnati.

working committees who are a part of and co-operate with prepared organizations.

There is a drive on now for corporation membership which should make its appeal among corporations interested in keeping up with the times in ceramic progress. The corporation membership is \$25 a year and the list of corporations already allied with this society indicate that there is good value return for the investment.

The Atlantic City Convention.

The next annual meeting of the American Ceramic Society will be held at the Hotel Traymore, Atlantic City, February 4 to 9, inclusive. It will be a remarkable gathering of the ceramic clans. Seven conventions in one, embracing the Society's industrial divisions, covering art, enamel, glass, heavy clay products, refractories, terra cotta and white ware, each of which has its own particular program and holds separate sessions simultaneously in the same hotel. The division of most interest to our readers is that of heavy clay products which is under the direction of Amos P. Potts, Brazil, Ind. Those who have not already done so, will do well to make early reservations at the Traymore Hotel. Program and final announcements will be given in full in a subsequent issue of The Clay-Worker.

Just about half of the workaday world is engaged in farming, and this farm half is a splendid half for the clay-working industry to cultivate for business.

MAKING BUSINESS GOOD.

A Prominent Chicago Paper Declares That Business is Good as We Make It, and Under Five Different Heads Follows Through With a Digest of Business Conditions That is Encouraging.

ONE OF THE UNUSUAL HAPPENINGS in the publicity world recently was in the Chicago Tribune, which claims to be the world's greatest newspaper, taking six full pages of advertising in the New York Times to exploit the assertion that business is as good as we make it. The assertion is divided into five heads, each of which occupies a page in addition to the first page announcement. The five headings are as follows:

1. Wheat is NOT king.
2. High wages are better than cheap labor.
3. Europe can't wreck our prosperity.
4. Only our own politicians can hurt us.
5. This is the day of opportunity.

With the front page announcement of these headings, the statement is made that it is a common human trait for men to imagine that others are more fortunate than they. Today it is the other way around, and each man admits that his own business is good, but seems to be afraid that he is better off than others, and that poor business in other lines may result in dull times. The manufacturer, for example, may imagine that the farmer is in hard lines, and this will soon bring slow business. Some have the fear that high wages will bring on high cost and a buyers' strike, and so it goes. The object of the advertising in this instance is to beget confidence and optimism by impressing the fact that business is largely what we make it.

Before going into the details of the ideas and arguments set forth in this unusual advertisement, we may well give a bit of thought to the subject of the clayworking industry in the light of business being as good as we make it, so that while reading we may be moved to make business good and to make it continue good for the clayworking industry. It is easily evident that to quite an extent how good business may be through the winter and next year will depend some on how aggressively the clayworking industry pushes its products and preaches the doctrine of confidence and optimism. Now keep this thought in mind and let us follow through the high points of the Chicago Tribune's arguments under the heads set forth.

Agricultural Conditions.

First, under the head that "Wheat is Not King," it is admitted that agriculture is of vast fundamental importance, because each year it creates billions of dollars of new wealth and furnishes raw material for food and clothing, and is an indispensable factor in national prosperity and existence. Without going into details of tabulated figures of estimated values of the farm products all told, and the manufactured products, the fact that wheat is not king is set forth in a charted circle of relative values of farm products, in which wheat counts for only 6 percent, while vegetables, cotton, corn and forage count for more than wheat. And oats and fruit and other crops separately run pretty close to it. So while a loss in wheat values is a loss particularly to the wheat sections of the country, it does not mean general depression among farmers everywhere. Moreover, we are given evidence that the gain in corn values this year has more than offset the loss in wheat value.

Last year we had some depression in the corn belt because of low corn prices. So while on the whole the 1923 wheat crop has a lower value than the 1922 crop, the corn crop had enough increase in value to much more than offset this, and late returns shows stiffer prices in corn that means prosperity for the corn growers, and some improvement in wheat prices that also spell better financial conditions in the wheat belt.

The Good of High Wages.

Under the second heading, the assertion that high wages are better than cheap labor, we can all be in agreement in the abstract, but we may differ as to the extent that is advisable for high wages. It is high wages which have made this the greatest nation of the world. And it is through inventing labor saving devices so that the productivity per man could be increased and thus sustain the high wages that we have been able to make more products available to everybody and hold prices on a reasonable basis while paying wages two to three times higher than has ever been known in the world.

One answer the publicity man in this instance makes to this is that directly or indirectly it is the wage earner himself who is the ultimate consumer. It is contended that the whole structure of our farms and factories depends upon the power of the masses to buy. That is why we have so much and do so much business in this country. The wage earners have more to buy with and consequently buy more. It is pointed out that in India and China, where there are hundreds of millions of people working long hours for small wages, prosperity lags because the wages are not sufficient for the workers to buy liberally of the products of their labor. It is admitted that there are some inequalities, and some among farmers, among landlords, and some among workers in the building trades, are getting pay out of proportion to what others are getting for an equal service. But there is a constant tendency for these inequalities to adjust themselves, and we should seek to encourage this rather than beat down wages to that low point which will curtail the buying capacity of the mass of workers. Then under the head that business is as good as we make it, the Tribune makes this point:

"It is up to every man to fight for his share of the general prosperity. High wages mean that the masses are going to buy grapefruit and grand pianos, fur coats and sedans, travel and buy bonds, washing machines and beauty preparations."

Our Relation to Other Countries.

The statement that "Europe can't wreck our prosperity" will find encouraging response from the clayworking industry, because this is one of our old and basic industries that has never looked to export trade for any great support. We do an export business in various lines of clay products, even including building brick, but more largely pottery products, and this is so small as compared to the domestic trade that if we should lose all of it we would not suffer seriously unless there should go with it some curtailment in the domestic trade. Moreover, our export trade in clay products is not with Europe, but is with Canada and with the Latin American countries south of us. And as a matter of fact, Europe sends more clay and clay products to us than we have ever thought of shipping to them. So far as clay products themselves are concerned, Europe cuts no figure directly. The indirect figure would be determined by what effect the general conditions in Europe would have on general prosperity and building operations.

We have a big import and export trade quite a percentage of which goes to Europe, and for the year it will be pretty evenly balanced. In past years we have most always exported more than we have imported, and have had a goodly balance in our favor. This balance may be turned in the coming year, especially so far as Europe is concerned, because they owe us much money and about the only way to be able to pay will be through sending us more goods than they buy from us. Even so, however, and though our export trade runs up to three billion and more a year, it represents less than 10 per cent of the domestic trade, so our real prosperity depends upon keeping business good with the domestic trade.

Politics and Business.

The fourth subject head in this remarkable publicity campaign is "Only Our Own Politicians Can Hurt Us." Under this head the statement is made that Europe cannot wreck

our prosperity, or a world's wheat surplus, or high wages, but our politicians can, and here's how:

"They can leave us defenseless before lustful military might.

"They can admit a flood of cheap labor to bring on unemployment—kill buying power.

"They can flood us with cheap foreign merchandise undermining our tremendous industrial structure.

"They can plunge us into the maelstrom of foreign intrigue and commit us to expensive international police work and possibly to fresh wars.

"They can strangle our transportation system, our essential arteries of commerce, with quack rate and wage systems.

"They can poison with politics the great federal reserve banking system which has brought us through the incredible strains of the last nine years without a panic.

The Congress which meets in December can imperil our prosperity—but it won't."

The point is made that the sanity and safety of the country against politicians will be assured by the press of the country.

Opportunities of the Day.

The final page is under the suggestive heading that this is the day of opportunity. Here it is pointed out that comforts, conveniences, pleasures beyond the wealth in past generations have become commonplaces with the average American. Further, it is said that never have men been so free to seek and win happiness as in this nation today. It is pointed out that we enjoy the harvest planted by pioneers who conquered a new continent, we command the elements by science, and we repose in a security from international tyranny or external aggression never known before. In a word, we have the greatest nation of people on earth in the best shape mentally, physically and financially, and surely with this kind of equipment and background or foundation business will be as good as we make it. Also we should regard it as a part of our pleasant duty to make business good.

Now, passing from the generalities which have been so conspicuously set forth by a great newspaper, to the specific questions of the clayworking industry, let us again give thought to this matter of how we may go about the work of making business good.

Co-operate and Boost.

Plainly the first requirements are interest and co-operation. We need to get together in spirit and in fact, to discuss our desires and our ideas of how to carry them out, so that we may work helpfully in harmony instead of pulling against each other or striving separately. And a great opportunity to do this will be furnished by the N. B. M. A. Annual Convention in Cincinnati. Not only for developing co-operation in a friendly spirit in the matter of new ideas and progress in the industry itself, but we should get out of it that friendly feeling which will also make for co-operation in the merchandising of the products.

And this brings us to the next point. That of making business good by boosting our products. There will be plenty of building going on next year unless all the signs read wrong. Therefore, it is only a matter of getting a fair percentage of this built of brick and other clay products to insure good business and prosperous times in the clayworking industry. So it is time to boost brick and clay products. We have done good boosting in the past, but there is more to be done yet. Moreover, one of the effective boosting slogans of the past, that "Built with Brick," poster sign, is still effective and useful. And if we will get busy with the use of this as we should during the winter and spring months it will do its share to help make business as good as we would like to have it.

That is a splendid suggestion of the Chicago Tribune that business is as good as we make it. Let us take the idea home to the clayworking industry and co-operate together to make business good.

SEEN IN NEW JERSEY.

PRACTICALLY ALL OF THE CLAY plants in the Raritan River district of New Jersey are running full, with regular working forces, while the clay miners, likewise, are busy. Labor is quite abundant and there is not the difficulty in securing men as was the case a few months ago. Also, there is more stability to present wage scales, varying from 45 to 60 cents an hour, and operatives are not quite so energetic in the line of advances in schedules; apparently they are satisfied with the present situation. The Perth Amboy Tile Works, Perth Amboy, is one of the active plants in this section, and is operating at maximum capacity in all departments. The Atlantic Terra Cotta Co. and the Federal Terre Cotta Co., at Perth Amboy and Woodbridge, respectively, both are busy, and giving employment, substantially, to their regular working quotas. The Fords Porcelain Works,, at Fords and Perth Amboy, are maintaining full production. Good sized clay shipments are leaving the properties of L. H. McHose, Inc., one of the prominent clay miners in this section.

Plants Destroyed by Fire.

October 21 and 22 will go down as rather disastrous dates in the Raritan River district, for two important plants were destroyed by fire, those of the National Fire Proofing Co., and the Raritan Hollow Tile Corporation, respectively. The fire at the first noted plant occurred about 7 o'clock in the evening of October 21, and had gained considerable headway before being discovered in one of the large buildings used as a dryer and machine shop. The twelve kilns in this portion of the works were completely destroyed, as well as several active buildings, with equipment. Some of the other kilns at the plant, only slightly damaged, can be reclaimed. The total loss is estimated at close to \$500,000 by W. Guy Weaver, district manager of the company, which maintains its headquarters in Pittsburgh, Pa. Up to the present time, it has not been announced as to whether the plant will be rebuilt. The other works of the company in this same section are all on the active list.

The second fire, at the plant of the Raritan Hollow Tile Co., Keasbey, occurred about 1 a. m., on the morning of October 22, and was discovered on the west side of the machine shop. It made rapid headway, and before under control had destroyed the clay shed, boiler house, drying department, machine room, and other miscellaneous departments, with loss estimated at about \$100,000, including buildings and equipment. The property was leased from the General Ceramics Co., which is headed by William G. Demarest, Plainfield, N. J., as president, and Robert Lyle, Red Bank, N. J., general manager. No action has as yet been taken towards rebuilding and it is doubtful as to when the plant will proceed in this direction.

ESTABLISH AN AGENCY ON THE WEST COAST.

THOMAS A. HIBBINS, general business and sales manager of the Stevenson Company, Wellsville, Ohio, announces the company has established a West Coast sales office at San Francisco, Cal. E. W. Dow, one of the best-known "trade missionaries" in the field, will be in charge, and owing to his many years of experience in the clayworking industry, the Stevenson Company feels that not only will Mr. Dow represent their company to the best possible advantage, but will give to the industry on the Pacific Coast invaluable service.

BRICK MAN ENTERTAINS CLUB AT LUNCHEON AT PLANT.

Frank S. Gery recently entertained the members of the Kiwanis Club, of Reading, Pa., at the Wyomissing plant of the Glen-Gery Brick Co. On arrival at the plant the guests were at once seated at long tables, where an excellent lunch was served, and after luncheon were taken through every part of the immense plant, where 50,000,000 brick per year are turned out.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 80. November, 1923. No. 5.

CURRENT COMMENT.

The harvest has been good.

* * *

The year's building has broken some records.

* * *

If you can manage it, why not keep running right through the winter months?

* * *

Not many brick plants will go into winter quarters with a surplus of brick on hand.

* * *

Unless the weather is unusually severe, there promises to be a fair volume of winter building activity, too.

* * *

We occasionally need to do some reforming, and often a good place to begin this is right where charity begins, and that is at home.

* * *

We all know now that it is good to have standard sizes in clay products and to do away with useless variety. And now that we have made some good progress along this line it is up to every clayworker to make his products fit the standards.

* * *

Mortar has always been a factor of importance in brick-through the color feature. So mortar colors, what they are, what kind is best, and how to best use them, make a subject matter of more than passing interest to the brick and hollow tile folks.

* * *

There is a natural temptation to hover around the warm spots and stay under cover during the winter months, but if we will resist this temptation and push out more we will

find that there are more worth while things that can be done during the winter months.

* * *

It helps some to have a wish, but it helps more to have a purpose—and go to it.

* * *

Coal has been more plentiful at somewhat easier prices lately and that has helped some, too.

* * *

Reducing the number of sizes and varieties of hollow building tile by a little more than half will help some.

* * *

When the common brick all become face brick, will the building tile set up a hollow about being called upon for backing up?

* * *

Speaking of better business, let us look it over, think it over, talk it over, then put it over, using as a slogan those "Build with Brick" posters.

* * *

There seems to have been an unusual percentage of face brick used the past season, and there is also a noticeable improvement in the artistic effects obtained.

* * *

Let us organize the sales element in the clayworking industry this winter for more effective work, and especially in promoting more home building with brick and hollow tile.

* * *

So far this fall no real car shortage has materialized, but instead the railroads have shown progress and enterprise in meeting the shipping needs, and this is another thing to be thankful for.

* * *

If those fellows who foster get-rich-quick schemes and sell wildcat stock would but turn their energies to selling the products of legitimate enterprise, we would all be a lot better off.

* * *

The bricklaying schools are getting encouragement from published statements of high wages, but that is no reason why the clay industry should lag any in its own interest in helping promote the training of apprentices to lay up the clay products of the future.

SOME IMPORTED BRICK.

Figures given by the official bulletin of the Merchants' Association of New York show that during the second quarter of this year, that is during April, May and June, 10,379,000 common brick came through the port of New York, as compared with 749,000 in the same quarter of 1922. This shows that New York has been importing considerable common brick this year, and the invoice value of \$71,666 for these 10,379,000 brick shows plainly that they were invoiced at a low figure, a figure around \$7.00 a thousand, which is below the cost of production in most sections of this country. This was probably the value at source of origin, and did not include freight cost and handling. Also it is probably something that will not be happening often. It illustrates, however, that there was some fire back of all the smoke of reports of importing brick from abroad this year to help supply the needs in the New York territory.

MACHINE BRICKLAYING.

We all know that power-driven machinery has played a big part in the work of producing brick and other clay products, and there has long been a dream of bringing machinery

into play as a factor in bricklaying. It is through the use of machinery that we are in this country able to pay the highest wages the world has known and still often meet the competition of other countries where wages are low. It is because machinery helps increase the productivity of man. So far in the bricklaying work, while we pay high wages, there has not been that compensating factor of machinery application to make it practical for one man to lay more brick. Many efforts have been made at developing machinery for bricklaying, and now there comes a report of a machine for this purpose being made by Sir William Arrol & Co., Ltd., of Glasgow, Scotland. The machine is called the "K" erector, and there is a newspaper report that though it requires three men to manipulate it, it will lay as many brick as a squad of 20 men. Somehow it sounds too good to be true, but here's hoping that genius is finding a way, or will find a way to bring power-driven mechanical appliances into play for assisting us in the work of bricklaying, for then we will have the way paved to bigger and better doings in the clayworking industry.

THE MOST PERFECT HOUSE.

What has been described by some of the building papers and in circular matter as the most perfect house in America is one built by C. M. Rehm, secretary of the Atlas Education Film Company, on Crescent boulevard, Glen Ellyn, Ill. The thing that will appeal to the clayworking industry about it is in the statement that it is brick. It is described as a brick colonial dwelling of six rooms, with the garage located under the sun room, which would ordinarily be the front porch, and is intended to represent a model of convenience and home comforts, as well as of architectural beauty. It has been made the feature of an interesting reel of pictures under the title "The Great Idea." Those who are interested and may want to have a look in on these pictures can get further information by writing the Richards-Wilcox Manufacturing Co., Aurora, Ill., who are manufacturers of doors for garages and a great line of other uses, as well as door hardware.

THE BURDEN OF INSURANCE COST.

We have a fair amount of talk and reminders about the annual fire loss, but not enough attention to the fact that in addition to this there is a burden of insurance cost made heavy largely because of the fire hazard involved in our forms of construction.

For the many thousands of dollars paid in insurance premiums there is no actual return but a consistent burden of experience. The mutual companies return some of it in the form of dividends, and the man who has a fire collects some in the form of insurance, but that is replacement, not production. The details of expenditures of the insurance money indicate that 25 to 50 percent of it goes to the maintenance of insurance organizations, and that from 20 to 30 per cent of it may be paid out in fire losses, the balance being distributed as profits.

As a matter of fact it is all a burden. And it is due to the danger of fire and increases directly with the fire danger. The man who has a home that is liable to burn down pays insurance on it simply that he may have an anchor to leeward in case there is a fire. If he never has a fire he never gets any returns for his insurance money. If he has a fire he does not really profit, but merely collects in the form of insurance for a part of the actual fire loss.

By and by we will come to realize that the maintaining of insurance organizations and the paying of heavy premiums

for fire insurance is a burdensome waste, and there will be a turning to more fireproof construction that we may reduce the burden of insurance cost by lessening the danger of fire.

PROGRESS IN CLAY MINING AND MARKETING.

The clay industry, as apart from the clayworking industry—that is mining and marketing of clays as such—has attained enough importance in this country now to receive separate listing and be made the subject of a special bulletin of the Department of the Interior, which constitutes a part of the mineral resources of the United States in 1922. And this year for the first time effort has been made to obtain figures showing the production of the so-called diaspore clay of the East Central Missouri, as distinct from the flint and other clays of that region. This is a material used mainly in making high grade refractories and abrasives, and according to figures there were 13,384 tons of it, valued at \$109,229 mined and shipped in 1922. The total production and sale of clay in the United States for the year 1922 was 2,647,700 tons, with a value of \$8,330,514. A little more than half of the production was in fire clay, but the kaolin and china clay, while representing less tonnage, rate much higher in average value, yielding an average of \$8.50 a ton. Ball clay showed an average of \$5.74 per ton, with the fire clay average only \$2.76, and stoneware clay with an average of \$1.90.

Pennsylvania produced and marketed more clay than any other state, but it was followed pretty closely by Missouri and New Jersey, each of which mined and marketed more than a million dollars' worth. As a matter of fact, the Missouri tonnage was greater than that of Pennsylvania, but the total value did not quite equal it. Ohio and Georgia also turned out a good tonnage of clay, as did also California, Colorado and Illinois.

As compared to ten years ago, we have doubled the value of clay mined and marketed, but the production in 1922, so far as tonnage was concerned, is practically the same as in 1913. We imported clay for the year to a total value of \$3,321,875, and exported to the total of \$437,572.

GOOD BUSINESS MANAGEMENT.

No matter whether it is in clayworking or in any other manufacturing enterprise, science and system are helpful, but they do not take the place of common sense and the gift of business management. There are some system enthusiasts who think that system is practically the whole thing in business, but they are just as much out of balance as the man who thinks his business can be run without system. We need system in business to beget order and relieve wastefulness, and we need science to help beget progress and more positiveness. But along with these we must have common sense and a talent for the particular kind of business a man is undertaking. System can't run your business, but it will help you run it more smoothly if you have the gift of business management and will bring system in to aid you.

CEMENT ENTERPRISE.

Though the cement association seems to have had a collision with government authorities lately that may handicap its activities for a while, it has been showing commendable enterprise in business promotion. A recent instance is the distribution of a pamphlet with the suggestive title, "Winter Built Concrete." The pamphlet with both pictures and text matter sets forth in detail many ways to carry on construction work even out of doors right through the winter months.

This is not only enterprise that should prove helpful in the cement industry, but anything that helps promote winter building is helpful to all kinds of building material, including brick, hollow tile, sewer pipe and other clay products which enter into construction work. It is a reminder, too, that clay products manufacturers may well give more active attention to promoting interest in and developing ways and means for carrying on actively in construction works during the winter months.

THE ONE-MAN GRADER

IS THE TITLE of a profusely illustrated folder issued by the Hadfield-Penfield Steel Company, Bucyrus, Ohio, which gives full particulars in regard to a remarkable road building machine. Those interested in highway improvements should get a copy of this folder, which may be had for the asking.

INDIANA BUILDERS' SUPPLY ASSOCIATION.

Indianapolis will be the center of attraction for the Builders, Supply Dealers and Manufacturers of the state January 14 and 15, when they will gather at the Claypool Hotel for their annual convention. For program, etc., address R. H. Hildebrand, secretary, Box 436, South Bend, Indiana.

"MECCO" AUTOMATIC COAL UNLOADER.

THE HANDLING OF COAL automatically is an important and economic process. The Manufacturers' Equipment Company of Dayton, Ohio, offers the trade a new line of automatic coal handling equipment, the use of which reduces the cost to 50 to 75 per cent of that required by old methods. Corroborative details are offered in an illustrated folder which will be sent to any reader of The Clay-Worker on request. The device is illustrated on page 489 of this issue.

NATIONAL RIVERS AND HARBORS CONGRESS.

THE NINETEENTH Convention of the above organization is scheduled for December 5 and 6 at the Willard Hotel, Washington, D. C. All sessions of the convention will be held in the Willard Assembly Room. The first session will be called to order at 10 a. m., Wednesday. The registration desk will be open Tuesday, December 4. The chief social function will be the banquet, which occurs on the evening of Thursday the 6th. A special railroad rate of one and one-half fare on the certificate plan for the round trip has been authorized. A large attendance is anticipated.

"A NEW ARRIVAL IN TOWN."

UNDER THE ABOVE caption in a neat folder, bearing a clever sketch of the stork carrying a hod of brick, the advent of A. S. Reid & Co., of New York, Inc., is announced. The officials of the corporation are: A. S. Reid, president and treasurer; Edwin F. Knight, assistant treasurer; John H. Black, vice-president; Charles T. Harris, secretary and manager of the New York office, and W. Joseph Degenhart, director. With five affiliated companies in Boston, Newark, Buffalo, Philadelphia and New York, one of the largest organizations for the distribution of clay products in the country has its main office in New York city, and architects and contractors can feel assured, when dealing with A. S. Reid & Co. of New York, Inc., that their needs will be satisfactorily and promptly served, wherever their jobs may be located. They are established at 1265 Broadway, where the master "gladhand" artist, Charles T. Harris, will welcome all comers.

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FOR SALE—A BARGAIN.

Forty-eight soft-mud drying cars in good condition. Specifications upon request.

S. N. JOHNSON,
10 4 c Laredo, Texas.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker; published monthly at Indianapolis, Ind., for October 1, 1923.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages or other securities: None.

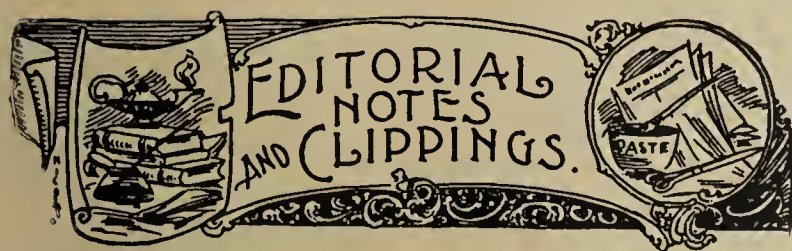
That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall,

Editor and Business Manager.

Sworn to and subscribed before me this 22nd day of September, 1923.

(Signed) FRANK S. CLARK, Notary Public.
(Seal) My commission expires April 29, 1927.



The Whale Brick and Tile Company has been incorporated with \$10,000 at Wilmington, Dela.

J. W. Groves, Ronceverte, W. Va., writes he is in the market for a small outfit for making about 20,000 brick per day.

The Pennsylvania Clay Products Co. has been granted a charter to manufacture brick and other clay products at Ridgway, Pa.

The Arkansas Bauxite Products Co., Little Rock, Ark., has been incorporated with C. D. Hyten, president, and Geo. W. Goodman, secretary-treasurer.

The Bridgeport Brick Co., of Dallas, Tex., has been incorporated with a capital of \$320,000. Incorporated by H. G. Leonard, W. H. John and others.

Plans are under way for starting a brickmaking plant at Auburn, Me. A. F. Redman and H. B. Richie, of Aroostook, Me., are interested in the proposition.

The Ohio Valley Clay Products Co., of Toronto, Ohio, has been incorporated with \$350,000 capital stock. Those interested are H. E., G. W. and D. S. Stratton, A. R. McClain and W. R. Alban.

At the recent meeting of the directors of the Woodstown Press Brick Co., Woodstown, N. J., the following officers were elected President, John F. Brady; treasurer, Frank Davis, and secretary, Thomas Daly.

The Port Newark Brick Co., Newark, of which Wm. D. Decker is president, was recently organized and has leased 2½ acres from the city at Port Newark, for the establishment of a new manufacturing and distributing plant.

The Crothersville (Ind.) Clay Products Company has been reorganized and incorporated for \$10,000. Additional equipment has been installed and the plant is now turning out a high grade building brick, drain tile and hollow building block.

Standard buff face brick will be manufactured at North East, Md., by the Elk River Clay Products Corporation, organized recently with \$210,000 capital stock. The company has purchased ninety-two acres of land on which to build the plant.

Improvements have recently been completed at the plant of the Decatur Brick Manufacturing Co., Decatur, Ill., which will enable them to run all winter. The company installed one of W. S. Tyler's Hummer screens, and will make face brick almost exclusively.

John A. Mercier is building a large soft mud brick plant in Detroit, Mich. D. J. Strickland, of the Wellington Machine Company, Wellington, Ohio, has supervision of the construction and equipment of the plant, which is to be one of the largest soft mud brick plants in this part of the country.

The Gamble & Stockton Co., manufacturers of brick and hollow tile at Jacksonville, Fla., have had a very busy season. During September they shipped thirty carloads of interlocking hollow tile to Miami Beach, Fla., for two new hotels there. One of the October shipments was 50,000 brick to Orlando, Fla.

The Centerville Brick Company is making a number of changes in its plant at Centerville, Iowa, preparatory to making hollow building tile and face brick. Heeretofore only common brick have been turned out at the plant. Frank Payne is president; M. G. Hall, vice-president; D. C. Bradley,

treasurer, and S. A. Martin, secretary and general manager of the concern.

The plant of the Willetts Clay Pottery Company, at Fairmont, W. Va., was partially destroyed by fire October 20.

The Potomac Pottery Co., of Keyser, W. Va., will construct addition to plant. Three kilns will be installed, doubling the capacity.

The Pocono Brick Company has started operations at Henryville, Monroe county, Pa., with orders to keep the plant running several months.

A. J. Boyd has purchased the old plant of the Fairfield Brick and Tile Company, at Fairfield, Iowa, and will put same in shape to manufacture brick.

The Standard Brick and Tile Company, of Portland, Ore., recently moved its office into new quarters at 323 Worcester Building, where they will be glad to greet their friends.

The Bridgeport Brick Co., of Dallas and Bridgeport, Texas, has been incorporated with \$320,000, with the following incorporators: H. G. Leonard, W. H. John and J. F. Lillard.

Owensboro Clay Products Co., Owensboro, Ky., has commenced the construction of a plant to manufacture brick, tile and kindred products. Cost, \$110,000. John A. Bolger is head of the concern.

The plant of the Pomona Tile Company, at Pomona, Cal., is fast nearing completion. It is expected to have the plant ready for operation about the middle of December. P. C. Boving is at the head of the company.

The McDonald Brick Company, of Ludowici, Ga., has been reorganized, and the manufacture of brick will be started at once. C. J. McDonald is president; J. L. McDonald, vice-president, and Leo C. Bergman is secretary-treasurer of the concern.

The Somers Brick Company, of Atlantic City, N. J., has had an unusually prosperous season. They have recently completed the work of overhauling the power plant, in which extensive repairs were made. The plant has a daily output of 80,000 common building brick.

The Standard Brick Company, of Prewitt, Texas, has been making a number of improvements, bringing the capacity of the plant up to 40,000 daily. They are now constructing five brick houses for the use of their employes, and will soon start work on a new brick office and commissary building.

John Buffelen, George Brewer and Louis Mickleson have organized the Tacoma Tile and Brick Co., at Tacoma, Wash., to manufacture clay products. The company is capitalized at \$50,000. Included in the equipment for the plant is a Standard steam brick dryer supplied by the Standard Dry Kiln Co., Indianapolis.

While performing his daily routine of duties in the mine of the Wellsville Fire Brick Company, Wellsville, Mo., James Whiting was working in the roadway when a mule used to draw the mine cars to the hoist became frightened and ran over him, knocking him down and dragging him about thirty feet. Whiting suffered a broken right knee cap and a broken shoulder blade.

The Acme Brick Company, of Ft. Worth, Texas, has been awarded a contract for more brick than has ever been bought in one order in the southwest for some time, it was announced recently by J. E. Fender, vice-president of this concern. The contract calls for the delivery by Jan. 1 of 700,000 brownish-blue bricks to be used in the construction of the new Mayo Hotel in Tulsa, Okla. Delivery will be started immediately. The Denton plant of this concern will manufacture the bricks

(Continued on page 488.)

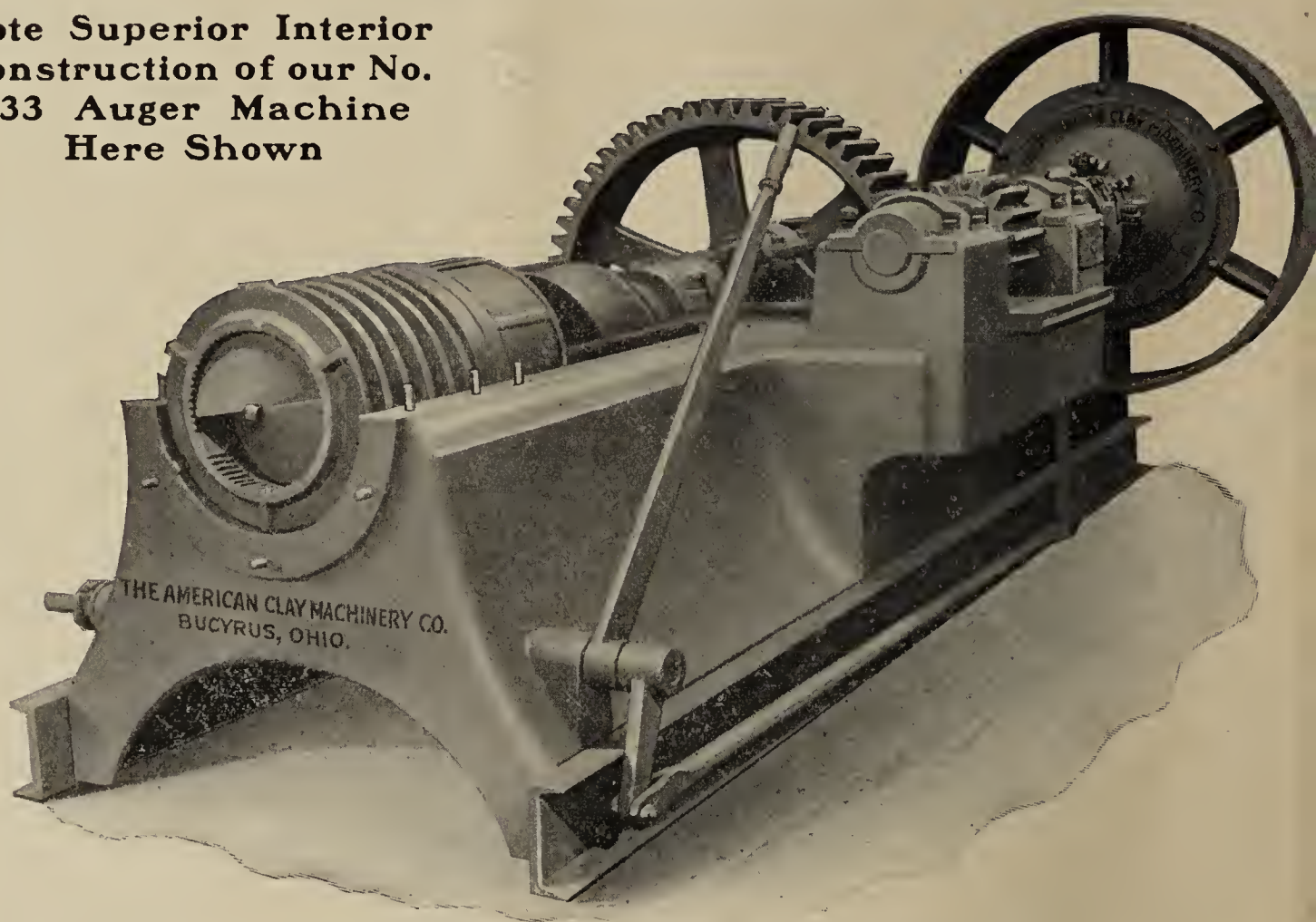
PRODUCERS

"Producers and Savers" of the "Built Right Run Right" Line are Built for that Purpose. The object in Designing and Building was the highest possible output on the least cost. In Production they "Surpass" and in "Saving" they "Eclipse" because of the years of experience we have had in building Clay-Working Machinery. The greatest possible Production with the Greatest Possible Saving is necessary for satisfactory and Profitable operation of your plant. In "Producing and Saving" we will cooperate. We build every clay plant need.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio

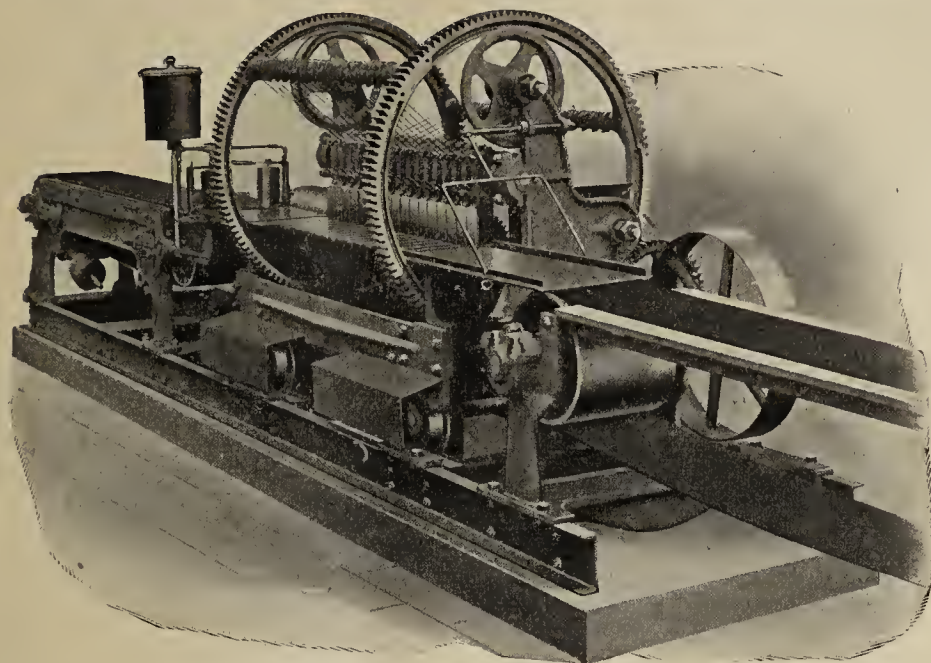
Builders of the "American Line"

**Note Superior Interior
Construction of our No.
233 Auger Machine
Here Shown**

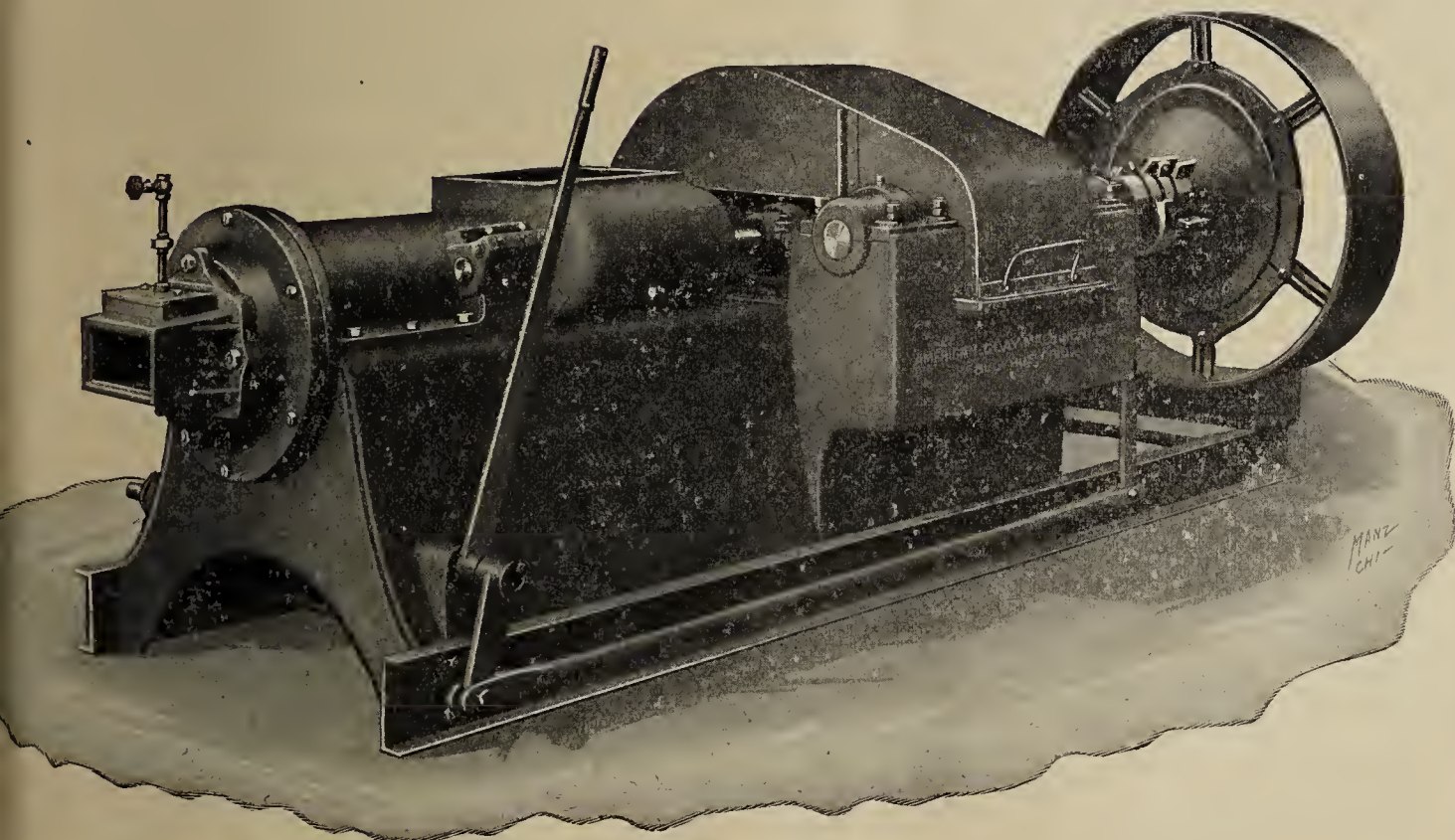


American No. 233 Producer and Saver

AND SAVERS



No. 342 Producer and Saver



AMERICAN No. 233 PRODUCER AND SAVER

EDITORIAL NOTES AND CLIPPINGS—Continued.

to fill this contract. Mr. Fender estimated that it would take approximately 70 freight cars to contain the brick.

George Fisher, of Middlesboro, Ky., is at the head of a movement to start a modern brickmaking plant at that place.

The paving brick plant of the Noble Brick Co., near Ava, Ohio, was practically destroyed by fire early in October. The plant will be rebuilt.

The plant of the Clayton Brick and Tile Co. will be moved from Clayton, Iowa, to Dubuque, Iowa. The stock in the company is owned almost entirely by Dubuque men, and the principal office is in that city.

Max Wolf, 3525 Harper Ave., Detroit, Mich., writes that in company with a number of other gentlemen he contemplates starting a brickmaking plant near Detroit, and is interested in receiving catalogs of clayworking machinery and supplies.

Damage estimated at hundreds of thousands of dollars was caused by fire which destroyed the Keasby plant of the National Fireproofing Company, of Perth Amboy, N. J., October 21. The cause of the fire is supposed to have been spontaneous combustion in a box of oily waste in the engine room.

William Burgess, a pioneer pottery manufacturer of East Liverpool, Ohio, was stricken with apoplexy while at work and died before help could be summoned. He came to East Liverpool from England when but ten years old. He started the West End Pottery Company in 1882, and had been connected with that pottery ever since.

Mason Chilcote, for a number of years associated with the Chicago Vitriified Clay Products Company, has recently severed his connection with that firm and is now on the staff of the Chicago Fire Brick Company, Chicago. Mr. Chilcote will have charge of the company's Chicago plant, and as well of the Mecca (Ind.) sewer pipe plant and the Brazil (Ind.) hollow tile plant, which are operated by the Chicago Fire Brick Co.

Johnson Brothers, operating a large clayworking plant at Clayworks, Iowa, just south of Ft. Dodge, have recently incorporated with \$600,000 capital stock under the firm name of Johnson's Clayworks, Incorporated. D. G. Johnson is president and Williams Johns vice-president, while E. J. Halligan is secretary and treasurer. The company manufactures building tile, silo blocks, paving brick, face brick and hollow tile.

Murfreesboro, Tenn., is to have a new enterprise, known as the Murfreesboro Brick Company. All the necessary stock has been subscribed and a strong organization effected. R. B. Roberts, J. C. Beesley, J. M. Avent and others are interested. The company has 65 acres of fine clay land on which they will erect a plant of 40,000 daily capacity. Work on same will be started about the first of January.

The Chehalis Brick and Tile Company is making extensive improvements in its plant at Centralia, Wash. Among the most important is a tunnel 10x14 feet to take the place of the rail crossing, and the addition of a new brick machinery room, 25x60, to the power room. The company is having a big run on brick, the trade this season being very brisk. As soon as the brick orders are filled a run will be made on building tile, for which there is also great demand.

Paul Rothe, an employe of the American Fire Brick Co., at Spokane, Wash., died recently, and arrangements were being made by Charles P. Oudin, the general manager of the company, to have burial made at the expense of the company, when it was discovered Mr. Rothe had a bank account of \$16,000. He had worked for the American company for thirty-three years, but had always been very reticent in regard to

his personal affairs. Two nieces living in Germany are the only heirs.

The Moore Brick Company, of Harrisburg, Pa., has been incorporated with \$90,000 capital stock.

Hecker Bros., Philadelphia, Pa., are planning to erect a \$100,000 plant at Tredegar, Ala., for the manufacture of fire brick, silica brick and by-products.

The Kusa Brick and Tile Company has been making some improvements at its plant at Henryetta, Okla., including the addition of another kiln. This will enable them to handle their increased output to better advantage.

The Concord Brick Company has recently been incorporated at Concord, N. H., and acquired a site of land on which a brickmaking plant will be erected. The officers of the new corporation are President, Arthur W. Stevens; secretary, Percy R. Sanders, and treasurer, Ervin W. Porter.

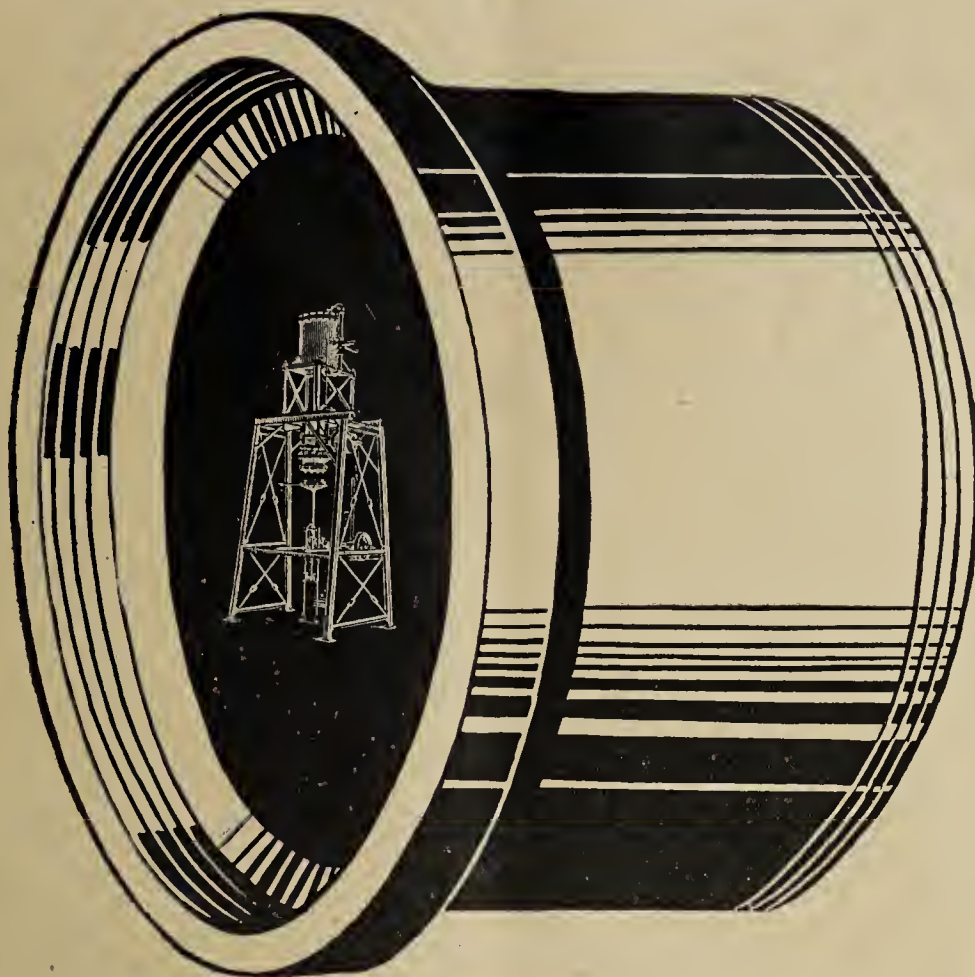
G. S. Ringle, of the Ringle Brick Co., died suddenly at his home early in October. Mr. Ringle had apparently been in good health, and his sudden death was a distinct shock to his family and friends in the clayworking craft of Wisconsin. Mr. Ringle belonged to a family of brickmakers and had been engaged in the brick business all his life.

Carl B. Harrop, Columbus, Ohio, advises us he is meeting with unprecedented success in the installation of the Harrop continuous kiln. An order was recently received for a large kiln for the Standard Sanitary Manufacturing Company, at Tiffin, Ohio. The company has been using another type of tunnel kiln, but has decided to install the direct fired kiln.

I. A. Kruson, of Danville, Ill., writes he has accepted a position with the Chicago Fire Brick Company as district superintendent at the Wellsville (Mo.) and New Florence (Mo.) plants. E. B. Hager has also been added to the organization as assistant superintendent in Wellsville. Mr. Kruson arrived recently to take up his duties and Mr. Hager will arrive soon. The Wellsville Fire Brick Company reports steadily increasing demand for its products, and is arranging to increase its production to a still larger daily output.

A half million dollar merger has been consummated by the officials of the Northwestern Terra Cotta Company, Chicago, Ill., and the Denver Terra Cotta Co., Denver, Colo. Each company will continue business under its own name. The officers and directors of the merged company are: George P. Fackt, Denver, president and general manager; H. J. Lucas, Chicago, vice-president; Adolph F. Hottinger, Chicago, treasurer; W. F. Denious, Denver, secretary; E. J. Dykes, Denver, assistant secretary; A. H. Kaepfel, Chicago, assistant treasurer.

With a twelve-acre site on the Southern Pacific and Union Pacific railroads at Southgate, the California Clay Products Company, established at Los Angeles, Cal., six years ago, is about to make an expansion step that will place it in the very top rank among manufacturers of ornamental and utilitarian clay products, according to an announcement of plans made recently by Victor Kremer, president of the rapidly growing organization. A new plant is to be built, increasing the company's potentiality or output from \$150,000 a year to \$1,500,000. The first unit is already under construction. "We will probably be ready the first of the new year to handle five times the business we are handling now," said Mr. Kremer, "and when the entire plant is ready our volume of business will be about ten times what it is now. We are daily finding it more and more difficult to supply the demand right here in southern California alone for products of this type." Associated with Mr. Kremer in the enterprise are W. N. Hamaker, S. C. Hagen, A. W. Savage and R. B. Keeler. The latter has had many years experience in the clay products industry.



As surely as day follows night

**a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

Editor The Clay-Worker:

NEWS FROM DIXIE LAND.



THU SOUTH IS ENCOURAGED by the advanced prices in cotton the last few weeks, but the crop is woefully short in most of the states. Construction work is quite as active now as anytime in the year and certainly will continue from work under plan for the greater part of 1924. Much of this work is elaborate in brick, considerable terra cotta, tile and fire proofing materials are used. Sewer pipe work, both for sanitary and drainage sewers, goes forward on a big scale, both in town and country. Many towns are putting in initial sewerage systems, Memphis is constantly extending her sewers and the delta farms in many counties are utilizing drain tile. Since the last communication to THE CLAY-WORKER, some large contracts have been let in and around Memphis and some work recently reported is just getting under way.

Bids for the Cossitt Library addition at Memphis are to be in hands of Architect E. L. Harrison, November 20. The exterior will be of red sandstone like the present building, the addition two stories, with considerable tile, terra cotta and brick work. It faces the river and S. Front St. at Monroe.

Great progress is now being made on the steel work of the Columbian Mutual Life Assurance skyscraper at N. Main and Court. Fourteen stories are yet to go up and seven are in place. Elaborate glazed tile, terra cotta and other tile work are to follow. The tower will be eight stories and total height twenty-three. I. A. Baum of St. Louis, the architect, is supervising the work. It will be completed about April, 1924.

The site is being cleared of the old Fransioli Hotel and other buildings at S. Second, Union and Third Sts., Memphis, preliminary to starting the work of building Hotel Peabody, to be twelve stories, with 615 guest rooms, 615 bath rooms, parlors, lobbies, convention and banquet halls, forty-five store rooms on first floor, 20 feet wide by 40 or 60 feet deep. Plans by Architect Walter W. Ahlschlager, Inc., of Chicago. The investment in site and building will amount to \$4,000,000. The structure is to be of brick, with much terra cotta, tile and decorative work. Brick similar to that used in the Blackstone Hotel, Chicago, will be used in the structure.

The brick plants at Memphis, Herbert-Fischer Brick Co., in South Memphis, Moss-Devoy Co. and others are active and report autumn trade brisk. Supply firms like the Memphis Brick Supply Co., Goodwyn Institute, Jno. A. Denie & Sons, A. J. Cook & Co., the F. R. Thomas Clay Products Co., all report very active conditions in the material and supply trade. Also the Fischer Lime & Cement Co., Walnut St., who handle everything in the building supply line and who are filling many big contracts in Memphis and adjacent states.

Building permits in Memphis for October showed decrease of \$355,550 from the total of September this year and \$1,161,570 under the total of October, 1922. The total for the ten months of 1923 stands at \$15,206,940, or \$162,839 under the same period for 1922. There is an increase of 815 permits over ten months a year ago, however, the total permits so far in 1923 running 4,650.

One of the big jobs just starting in the South is the rebuilding of the Arlington Hotel, at Hot Springs, Ark., main structure to be twelve stories, with two wings seven stories, 22x256 feet, and 150 feet in wings. There will be 600 rooms with baths or lavatories, 250 with baths, fifty rooms with mineral water from the Hot Springs. The building will represent an investment of \$2,000,000. Contract has been awarded to Ault & Borden, of Little Rock. Completion December 15, 1924. Much brick, tile and fire proofing to be used throughout. The Arlington Hotel Co., D. Fellow

Gaines, president; W. E. Chester, vice-president; are the builders. It will be the largest and finest hotel in Arkansas.

Murch Bros. of St. Louis have been awarded contract for construction of U. S. Veterans' Hospital No. 79, at Fort Roots, Little Rock. \$614,000 cost.

An important contract just let at Memphis was for the department store of B. Lowenstein Bros., Inc., at S. Main, Monroe and Front Sts., nine stories and basement, to Gauger-Korsmo Construction Co. of St. Paul, Minn. Cost, \$830,000.

DIXIE.

AN ACCOUNTING CONFERENCE.

THERE WAS AN interesting conference on uniform cost accounting held at the Drake Hotel, Chicago, October 23, under the auspices of the Chamber of Commerce of the United States with 136 representatives present from 78 different industries. Included in the representation was a fair showing of clay products people. The face brick manufacturers, the paving brick manufacturers, and hollow building tile manufacturers were represented and participated in the discussions. The conference not only showed the keen interest that has been awakened in uniform accounting in given industries, but the showing indicates that splendid progress is being made and that pretty soon we should have the clayworking industry in the main hooked up with the idea of uniform accounting as an aid to better understanding as well as surer business methods.

ENGINEERING SERVICE BULLETIN.

THERE IS IN HAND the second edition of bulletin Number 1 of Engineering Service to the clay industries by the Ceramic Engineering Co., Columbus, Ohio, of which W. D. Richardson is president. It goes into the details of the service rendered by this organization, from the examination of clay properties to the designing and erecting of clayworking plants in which there is a proper combining of the profession of ceramics with the business of engineering.

NEW CLAYWORKING PLANTS.

It is estimated by the F. W. Dodge Service that the clayworking industry itself erects new industrial buildings each year to the value of \$2,988,000. When we consider that the industrial building part of the clayworking plant is a very minor part of the investment, this is pretty good evidence of steady progress in developing clayworking plants.

SERVICE! SERVICE!! SERVICE!!!

UNDER THE above heading, The Bonnot Company, Canton, Ohio, announce further particulars in regard to their No. 32 Combined Machine for making hollow building tile. It is equipped with timken tapered roller, thrust bearing, and steel cut gears, enclosed and lubricated by oil bath. The principal illustration is a large and beautifully executed engraving showing the gear end of the machine. It has other improvements, such as adjustable knives, which insure long life and large capacity. Their ad will be found on page 419.

"DO IT WITH OIL."

THE ABOVE IS the new slogan adopted by the Chicago Brick Machinery Company, who for a number of years has given especial attention to oil as a fuel for brick, tile and other clay products. The unique folder, giving valuable pointers on how to increase dividend earnings, gives thirteen lucky reasons why their oil burner should be used. The folder was addressed in green ink, so we know it comes from John J. Moroney himself. Those wanting information on oil as a fuel will do well to get in touch with John, 2825 West Harrison Street, Chicago, Ill.

HONOR ROLL

OF "Auto Brik" MACHINE USERS

This list shows the growth of AutoBrik Machine users in all parts of the United States and Canada—a class of owners who thoroughly know the brick business from every angle. This Honor Roll is the brick industry's endorsement of AutoBrik Machine performance.

NEW ENGLAND STATES

Tuttle Brick Co., Middletown, Conn.
The Howard Company, New Haven, Conn. (Fire Brick)
C. P. Merwin Brick Co., Berlin, Conn.
R. O. Clark & Son Brick Co., East Berlin, Conn.
Stiles & Reynolds Brick Co., Berlin, Conn.
The Drury Brick & Tile Co., Essex Junction, Vt.
Holyoke Brick Co., Holyoke, Mass.
New England Brick Co., Boston, Mass. (2)

NEW YORK STATE AND HUDSON RIVER DISTRICT

Doyle Brick Co., Utica, N. Y.
Jova Brick Works, Roseton, N. Y. (2)
Roseton Brick Corp., Roseton, N. Y.
Denning's Point Brick Works, Beacon, N. Y. (2)
Powell & Minnock, Coeymans, N. Y.
Sutton & Suderley Brick Co., Coeymans, N. Y. (2)
Chas. S. Shultz & Son, Kingston, N. Y.
Mayone Brick Co., Inc., Saugerties, N. Y.
Consolidated Brick Co., Horseheads, N. Y.
American Brick Corp., Greenridge, S. I., N. Y. (2)
The Hutton Company, Kingston, N. Y.
Rose Brothers, Kingston, N. Y.
P. & M. Brick Co., Saugerties, N. Y.
Lynch Brothers, Kingston, N. Y.

NEW JERSEY, PENNSYLVANIA, MARYLAND AND DELAWARE

Chas. S. Shultz & Son, Hackensack, N. J.
Henry Gardner, Little Ferry, N. J.
M. D. Valentine & Bro. Co., Woodbridge, N. J.
South River Brick Co., South River, N. J.
Somers Brick Co., Atlantic City, N. J.
Lancaster Brick Co., Lancaster, Pa.
William H. Grothe, York, Pa.
Springgarden Brick & Clay Products Co., York, Pa.
Alwine Bros. Brick Co., New Oxford, Pa.
Frankford Brick Works, Philadelphia, Pa.
H. M. & C. B. Siner, Philadelphia, Pa.
Zehnder Brick Co., Easton, Pa.
Fields Brick Co., Chester, Pa.

Kier Fire Brick Co., Pittsburgh, Pa. (Fire Brick)
Welch-Bright Co., Monaca, Pa. (Fire Brick)
A. F. Smith Co., New Brighton, Pa. (Fire Brick)
Baltimore Brick Co., Baltimore, Md. (2)
Jas. B. Oberly, Wilmington, Del.
Excelsior Brick Co., Baltimore, Md.
William G. Price, Jr., Chester, Pa.

MIDDLE WEST

McLain Fire Brick Co., Irondale, Ohio. (Fire Brick)
Dover Fire Brick Co., Strasburg, O. (Fire Brick) (2)
Superior Brick Co., Cleveland, Ohio. (2)
Hydraulic-Press Brick Co., Toledo, Ohio.
Hinds Brick & Tile Co., Sandusky, Ohio.
Robinson Clay Products Co., Akron, Ohio.
Mercier-Bryan-Larkins Brick Co., Detroit, Mich. (4)
First Ave. Brick & Tile Co., Evansville, Ind.
Jacob Daniels Brick Co., Detroit, Mich.

SOUTHERN STATES

E. T. Mankin, Inc., Richmond, Va.
Adams Bros.-Paynes Co., Lynchburg, Va.
Salem Brick Co., Salem, Va.
Lexington Brick Co., Lexington, Ky.
Maysville Brick Co., Maysville, Ky.
Tennessee Brick & Tile Co., Dyersburg, Tenn.

NORTHWEST

C. H. Klein Brick Co., Chaska, Minn. (5)
Verna Brick Co., Warba, Minn.
Excelsior Brick Co., Menomonie, Wis.
Wisconsin Red Pressed Brick Co., Menomonie, Wis.
Zerrenner Bros., New London, Wis.
Watertown Brick Co., Watertown, Wis.

WEST AND SOUTHWEST

Remillard Brick Co., Pleasanton, Cal. (2)
Builder's Brick Co., Hooper, Neb.
Western Brick Co., Santa Monica, Cal.
San Joaquin Brick Co., Stockton, Cal.

CANADA

Jas. Cornhill & Sons, Chatham, Ontario.
Price & Smith, Toronto, Ontario.

Lancaster Iron Works, Inc.

Lancaster, Pa.

Brick Machinery Department, James P. Martin, Manager
*Specialists in Completely Equipping Building Brick and Fire Brick
Plants for the Manufacture of Brick by the Soft Mud Process.*

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



MILWAUKEE IS GETTING to be a brick built city, according to local brick concerns. Not only are the many apartment houses, schools, office buildings, churches and theaters now under construction being built predominantly of brick, but there is an ever increasing tendency to build private homes and duplex flats of brick also. The proportion of the latter being constructed of brick is rapidly increasing, and leading brick men look forward to a day in the not remote future when a frame structure will be an exception to the rule. The better class of home builders in this city, as elsewhere in the state, is awakening to the artistic effects made possible by the skillful application of fancy face brick, and the appearance of many of the newer residences is greatly enhanced by tasteful color combinations, as well as by masonry design of unquestioned beauty. Bricks of intentional faulty construction have solved in the minds of many builders the problem of any monotony that may have been used as an argument against an unbroken brick wall. Special orders for deliberately distorted bricks have been filled for the owners of some of the state's finest residences.

The building season has been prolonged this year out of all proportion to previous years in the state of Wisconsin, and especially in Milwaukee, where every effort is being put forth to stimulate all year round building. Instead of slowing up during the late fall, as has been the case heretofore, building operations in October have exceeded those of former months. This is accounted for in part by the fact that many necessary structures, such as schools and public buildings, were not started during August and September, due to the prevailing idea that prices of clay products must come down ere long. With the first indication some time ago of lower costs for materials, a number of construction jobs were contracted for.

Work on the construction of several large buildings, which was held up for many weeks pending a decision in regard to the Wisconsin zoning law, is now going ahead. The law provides that buildings in Milwaukee must be limited to 125 feet in height, while the limit elsewhere in the state is set at 100 feet. In declaring the constitutionality of the law, the court made exceptions in the case of several construction jobs which had already been started. These include the addition of five stories to the altitude of the Wisconsin Telephone Co. administrative building in Milwaukee, and several hotels at various points in the state. Work on these is now going ahead at a rapid rate.

While the buildings for which face brick is now being supplied by Ricketson & Schwarz, of Milwaukee, are mostly smaller ones, they are many in number, and their sum total amounts to a considerable volume of business. Among the larger contracts that have recently been awarded to this company is the one for supplying the bricks for the new \$160,000 apartment building being erected at Thirty-first and Wells streets for the Wisconsin Building and Investment Co. This structure is to be three stories in height, of brick and reinforced concrete construction, containing 40 apartments.

Bricks for the large new hotel and amusement building

being erected at 136 Second street for the Second Street Company are being supplied by the Wisconsin Face and Fire Brick Co., which is enjoying an active season.

After considerable experimenting as to the type of bricks the clay on their premises was best adapted to, the Wisconsin Clay Products Co., at Kenosha, has announced its readiness to start producing its clay products at the new yards a few miles west of the city on the Burlington road. The company, which was recently incorporated by a number of Kenosha business men with brickmaking experience, is capitalized at \$100,000. Of this amount about \$44,000 has already been invested in making the new brickyard one of the most up to date ones in the state. The new brick concern will supply a wide territory, as it is the only brickyard in a radius of many miles. The clay deposits owned by the company cover an area of fifteen acres, said to be good quality clay to a depth of from 35 to 100 feet. It is estimated that enough clay is available on the premises for a production of 250,000,000 or more bricks. The equipment now on hand is capable of a production of 50,000 bricks a day.

Arrangements have been made whereby Norman J. Pipkorn Company will henceforth feature the products of the Twin City Brick Company, of St. Paul, Minn. Mr. Pipkorn announces that he will make every effort to popularize this line in his territory.

Among the late fall jobs for which the Kraatz Brick Company will furnish the face brick are two large buildings in Milwaukee, one being erected at Sherman boulevard and North avenue for the Columbia Lodge, Knights of Pythias, and the other is the new Franklin Street school at the intersection of Pease street. Both buildings represent a considerable amount of bricks.

In connection with the work of the Kewaunee Brick and Tile Company, at Kewaunee, Manager Dommick Watery is doing considerable work for farmers in the surrounding territory with his tiling machine, which is the only one in Kewaunee county. Up to the present time the tile laying work has been done at times when the business at the brickyard was not rushing, but Mr. Watery contemplates making this kind of work on a par with other departments of the company in the coming spring. Thus far more than 11,000 feet of tile have been laid for farmers during practically spare time.

A. BADGER.

Perforated Metal Screens for all Purposes



Elevator Buckets,
Light and Heavy
Steel Plate
Construction.

HENDRICK MFG. CO., Carbondale, Pa.

New York Office
30 Church St.

Pittsburgh Office
544 Union Trust Bldg.

Hazleton, Pa., Office
705 Markle Bank Bldg.

Bertha Coal

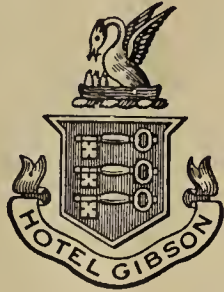
Is used Extensively by many of the large companies which have made the CLAY AND KINDRED INDUSTRIES famous throughout the world. If YOU desire a Dependable Source of Coal Supply, backed up by Courteous and Efficient Service, we shall be pleased, upon inquiry, to direct you to some of our patrons for reference as to the Quality and Preparation of Bertha Coal.

Our mines are located in Ten of the Choicest Bituminous Districts of Pennsylvania, Ohio, West Virginia and Kentucky and we are in a position to ship Quality Coal to all points East of the Mississippi River. We solicit your inquiries.

BERTHA-CONSUMERS COMPANY of Pittsburgh, Pa.

EIGHT BRANCH OFFICES: Akron—Cleveland—Corry, Pa.—Covington, Ky.—Detroit—New York—Montreal—Pt. Huron

CINCINNATI'S HOTEL GIBSON



Headquarters
for
NATIONAL BRICK MANUFACTURERS
ASSOCIATION CONVENTION
January 28th to February 2nd, inclusive
Early reservations suggested.

WITH THE POTTERS.

THE RESOLUTE POTTERY COMPANY., Third Street, Trenton, N. J., manufacturer of sanitary earthenware products, has filed plans for the erection of a new two-story addition to its plant, estimated to cost about \$2,000, exclusive of equipment. A general building contract has been let to Joseph Hopewell, Trenton. The company will also construct a new stack.

The Eagle Electric Porcelain Co., N. J., has completed plans for the erection of the initial building for a new local plant, as referred to in the last issue of THE CLAY-WORKER. The structure will be located on Chadwick Street, and will be one-story. It will cost approximately \$10,000, with equipment. It will be built by the General Contracting & Construction Co., Trenton. The company, it is understood, has tentative plans for other buildings to be erected at a later date. It was formed recently with a capital of \$100,000, and is represented by George A. Cella, 147 East State Street, Trenton.

H. B. Richie, Aroostook, Me., has leased a tract of 8 acres of land from A. F. Redman in the Danville Junction section, Auburn, Me., and plans for the establishment of a new plant. The property is rich with clay suitable for the production of water-struck brick of high quality, and the proposed plant will be devoted to this branch of manufacture. It will consist of a number of units, with power house, and is estimated to cost more than \$125,000, with machinery and clay-mining equipment. It is said that a company will be formed by Mr. Richie for the operation of the plant. There are now two other yards in this same section and the season output of these plants totals about 2,500,000 brick.

The Standard Sanitary Mfg. Co., Bessemer Building, Pittsburgh, Pa., manufacturer of vitreous china and other sanitary ware products, has completed plans for extensive additions to its plant at Tiffin, Ohio, for large increase in production. Three new one-story buildings will be erected, to be 90x420 ft., and two 90x140 ft., each, respectively, estimated to cost \$350,000, including equipment. A new warehouse and office will also be constructed, 140x260 ft., two-story and basement, to cost about \$150,000. It is proposed to award the general building contract and commence work at an early date, following with the installation of machinery. G. W. Netcher, Tiffin, is architect for the work. The company has awarded a general contract to Cahill Brothers, 110 Sutter Street, San Francisco, Cal., for the erection of a new factory branch in that city, to be located at Ninth and Brannan Streets; it will be five-stories and basement, estimated to cost about \$285,000. Weeks & Day, 315 Montgomery Street, San Francisco, are architects for this project.

The West Coast Porcelain Co., Milbrae, Cal., manufacturer of vitreous porcelain products, primarily of sanitary ware character, has perfected plans for enlargement in its plant to cost approximately \$500,000, including buildings and machinery, bringing the plant investment to about \$1,000,000. Work will soon be commenced on the new structures, designed to develop a plant output of about one car, or 600 pieces, per day. The plant is located in the Peninsula section, near San Francisco, and was established close to five years ago. Henry Weiss is president and general manager, and R. L. Dunn, vice-president and secretary.

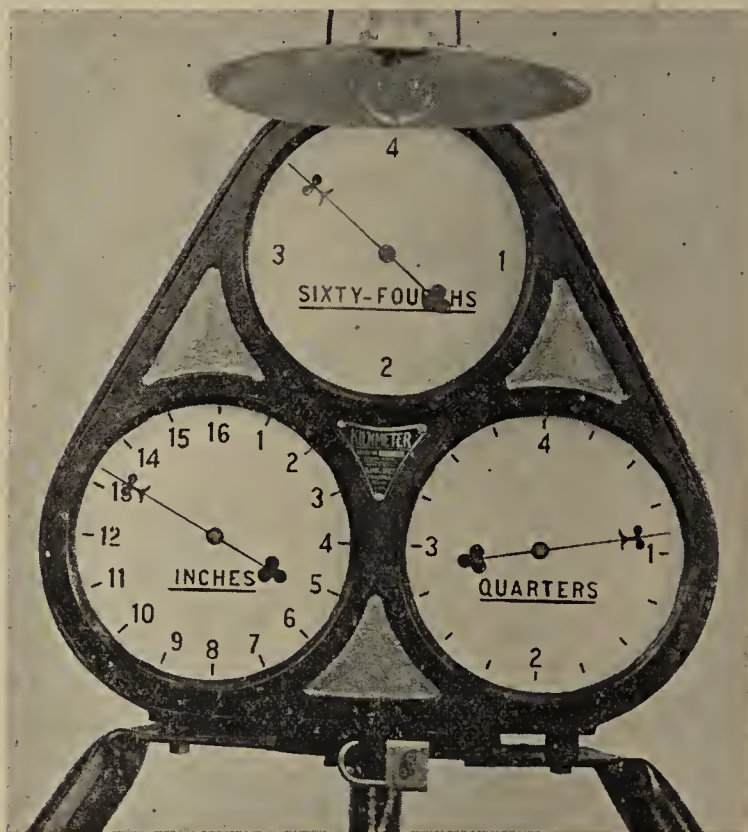
The Albright China Co., Carrollton, Ohio, has acquired property heretofore held by the Tuscan Rubber Co., and will use as a site for plant additions, on which work will be placed in progress at an early date. Four additional kilns will be constructed, making a total of 14 kilns at the pottery. The company is also operating a branch plant at Scio, Ohio.

The Potomac Pottery Co., Keyser, W. Va., manufacturer of sanitary ware, has work well under way on a new addition to its plant, consisting of a main structure, 35x126 ft., to be provided with three new kilns. It is proposed to double, approximately, the present capacity, and the installation of equipment will soon be arranged.

The Trenton Potteries Co., Trenton, N. J., manufacturer of sanitary ware, has work in progress on extensions and improvements in its plant on Lalor Street, for which a contract recently was awarded to S. W. Mather & Sons, Trenton.

A. POTTER.

NO EXCUSE FOR OVERBURNED PRODUCT NOW



THE KILNMETER

(Patents Pending)

For the first time since the world began, you are able to observe at any moment, day or night, the actual vertical settlement of the kiln charge magnified over five hundred to one.

The moving micro-hand travelling visibly, like the second hand of a watch, keeps you apprised at all times of the actual performance of your product under fire, and affords data that enables you to correct all your firing factors, fuel feed, draft, firing term, cleaning period to correctly meet your particular yard condition.

Let us tell you more about this remarkable time, labor and fuel saving device, the most beneficial clay works invention of the century.

Write today to

THE KILNMETER

436 W. Washington St., Indianapolis, Ind., U. S. A.

Inquiry will not obligate you in any way.

CONSTRUCTION FEATURES OF IMPORTANCE TO CLAY PLANTS.

(Continued from Page 445)

brick in a kiln as in an ordinary building. The tendency now is towards the use of more common brick in kiln work where formerly No. 2 fire brick was used. For dipped brick with narrow joints, it is essential to select brick of uniform thickness, and it is also important to lay full mortar joints. There is a vast difference in the purpose and treatment of a dwelling and a kiln after completion, and masons, not experienced in kiln work, should be closely watched. The best plan is to build kilns with alternate header and stretcher courses, and not more than two stretcher to one header course should be used.

Drainage is usually necessary and should be covered by specifications. Its extent and necessity depend entirely upon local conditions.

Generally speaking, in constructing a kiln, it is best to proceed as follows: Excavate all over to proper depth and lay drains; level up all over with sand; pave all over with one course flat brick; build foundation walls and lower draft flues through foundation; build outside kiln walls complete with furnaces, doors, and crown; build bag wall foundations; build feather walls between bag wall foundations and kiln wall foundation, with proper clearance all around for expansion; lay floor bricks; build furnace bags.

The walls of a round kiln are easily built by means of a sweep, as shown in Fig. 12. The same pole with a different arm, set higher up to correspond with the shape of the crown is being used later as a guide for the circularly set courses of the crown.

The crown of a rectangular kiln or of the chamber of a continuous kiln is erected over a form, consisting of centers and slate, which is set up on bricks or posts and wedged up against the crown to proper level, and is moved along like the smaller forms or centers used on flue arches.

The big band on a round kiln to hold the crown is set up when the wall is high enough to receive the projecting bricks which carry it. The brickwork is set up behind the band but not against it, leaving a layer of mortar for some leeway in expansion.

All brickwork during construction is to be covered over night to prevent rain from washing out the mortar, and to facilitate more uniform hardening and setting over night. Fig. 12 also clearly shows the manner of covering the brick.

Single, double and quadruple stacks with partitions have to be built from the outside by scaffolding while large stacks without partitions for a row of kilns or for power, are erected from the inside.

This is very much faster than with scaffolding from the outside. In Fig. 13 is shown to the left a stack with scaffolding and to the right one that is built from the inside.

The essentials of a good kiln stack are: solid foundation, independent fire-brick lining, outside brick walls in cement mortar with full joints, and a weatherproof coping.

The Port Newark Brick Co., Newark, N. J., headed by William D. Decker, 118 Clinton Avenue, has leased property from the city at Port Newark and, has plans under way for the construction of an extensive plant. The acquisition covers about 2½ acres of land, on which a manufacturing and distributing plant will be constructed. It is proposed to commence operations early in the coming year, and have the initial units ready for service at the earliest possible date. The estimated cost is placed in excess of \$100,000, with machinery and operating equipment.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way of Winning Clay

Because:—It is economical in the use of power and labor.

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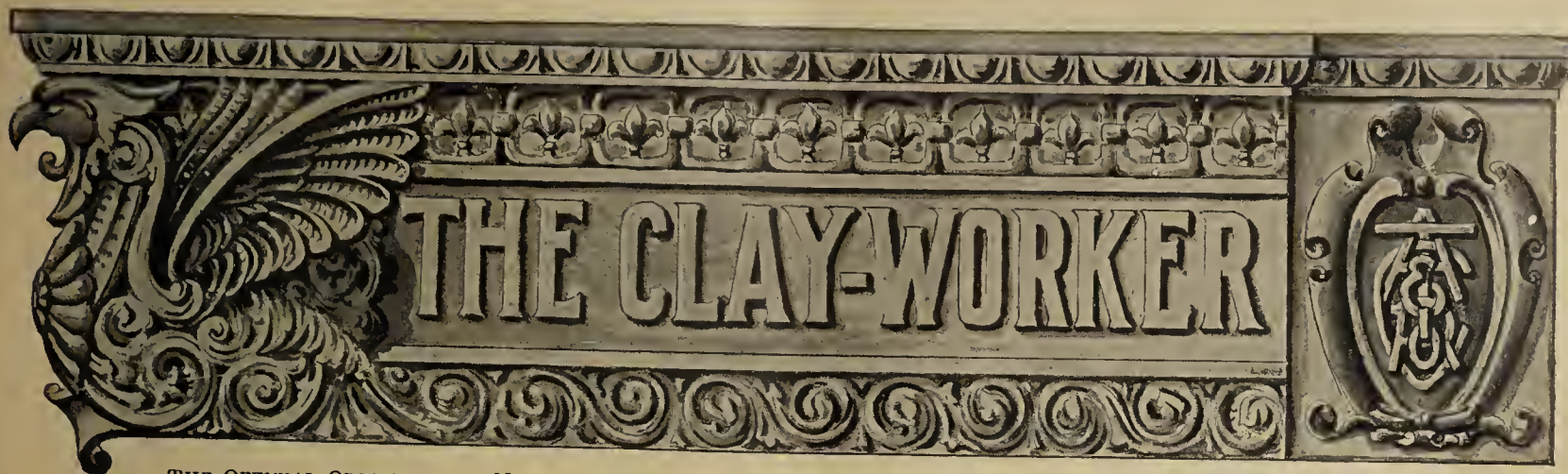
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THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 80

INDIANAPOLIS, DECEMBER, 1923.

No. 6

BURNING BRICK WITH OIL IN TUNNEL KILN:

Remarkable Plant in Connecticut, formerly Producing Common Brick, Now Makes Excellent Face Brick Out of Same Material, With Greater Speed, Less Labor, and at Lower Cost, by the Use of Oil as Fuel, Tunnel Kiln and Automatic Equipment.

THE most unique building brick plant in the New England states, in fact we may truthfully say one of the most unusual building brick plants in the entire United States, is that of the Donnelly Brick Company, New Britain, Conn. On any average Connecticut brickyard we will find the brick being dried in open racks and burned with wood in the old-fashioned scove kiln and the plant consequently being operated only a portion of the year. Or, compare the average building brick plant anywhere in the United States where driers are used and the ware burned in round down-draft kilns with coal as the fuel, with the plant of the Donnelly Brick Company, and we find the latter distinctly different in a great many ways, and hence in a class by itself.

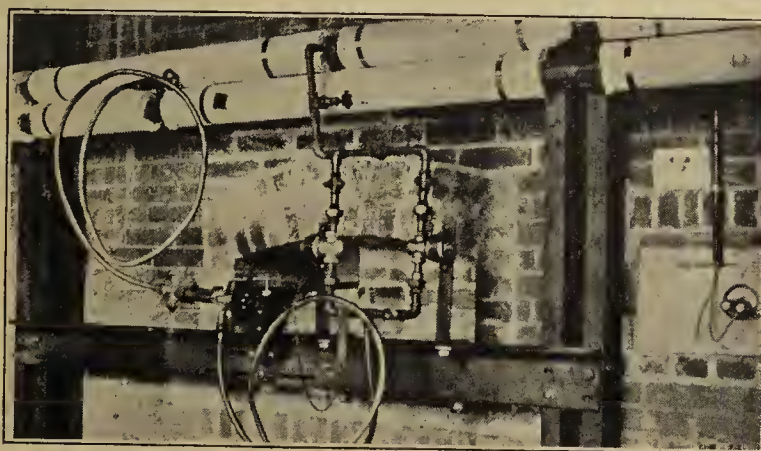
The same kind of clay is found there as in any other New England yard, but they have eliminated entirely the old hand methods and are now owners of a 365-day plant, using automatic machinery, up-to-date drying methods, and burning this difficult clay with oil in a tunnel kiln, and getting a high grade of ware with little, if any, kiln loss. In fact the Donnelly brick are used now as face brick, commanding face brick prices, while formerly the brick made

were common back-up brick and the kiln losses were tremendous. The American Dressler Tunnel Kiln, as operated on this plant, turns out day after day the same quantity of high quality brick with no appreciable kiln loss and at a greatly reduced fuel cost per thousand and elimination of considerable

labor. The Donnelly Brick Company's plant is located on the New York, New Haven & Hartford railroad, one mile south of New Britain, Conn. The first plant erected on this site was built by M. H. Donnelly in 1892. It was the usual summer yard, producing annually three to four million brick, the ware being dried in open racks and burned with wood in scove kilns. The plant was operated in this fashion until 1912, when upon the death of Donnelly Senior, M. H. Donnelly, Jr., the present owner, took charge of the plant.

The first step taken to im-

prove the plant was the elimination of the horses and carts by the adoption of conveying systems such as cable and winding drum for bringing up clay dump cars and a cable pallet conveying system. In 1916 the open rack method was discontinued and a Wellington two-tunnel steam dryer installed, which put the plant on a year round basis. In the four years



Close-up View of Oil Burner, Showing Steam and Oil Lines, Calibrated Oil Valves and Portion of Pyrometric System.

from 1912 to 1916 the new methods adopted reduced the number of men required from 50 to 25, and at the same time increased the production from three to four million to eleven million brick annually. The Eastern Machinery Company's New Haven machine has been used here for 15 or 16 years, and today is making approximately 15,000,000 brick yearly.

Elimination of Setting Brick in Kiln.

In 1920 an American Dressler Tunnel Kiln was erected, using producer gas as fuel. This new kiln eliminated all wheeling and setting of brick by hand. While it formerly required six weeks to get clay from the bank into brick ready for the market, today 62 hours only is the necessary lapse of time. Think of it—the clay being dug today and in 62 hours it is ready for the hands of the bricklayer!

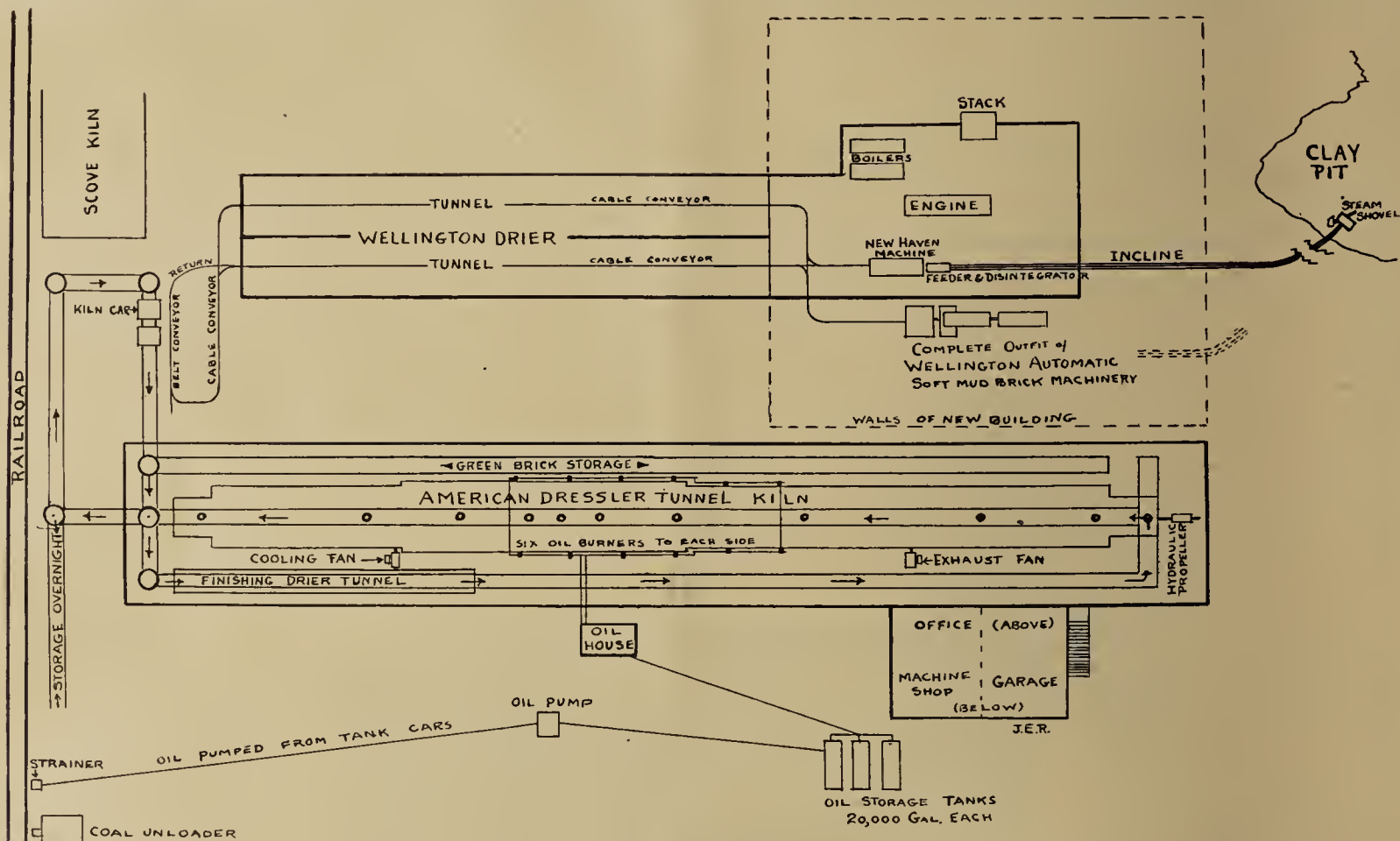
In 1921 the factory was destroyed by fire and all equipment and buildings had to be replaced, save for the gas producers, the Dressler kiln and some slight repairs to the New Haven

16 feet each, the balance in 8-ft. bench as condition of bank requires. It is the usual surface clay found in the New England states.

A Thew $\frac{5}{8}$ -yard electric shovel digs the clay and loads it into Western clay dump cars. A $\frac{3}{4}$ -yard Thew caterpillar traction shovel has been added to the equipment. The raw material is taken in the 3-yard dump cars up incline by winding drum and cable. However this will be practically eliminated when a Fate, Root, Heath Company's Plymouth Locomotive is installed for this purpose. As the clay is dug right through the winter, no clay storage is necessary.

Preparation of the Clay.

The clay is dumped at top of incline into an Eastern Clay Machinery Company's clay feeder and then passes through a Chambers Bros. disintegrator and into a New Haven machine, seven brick to the mold. Eighteen molds of brick are made each minute during machine operation, or at a rate of 126



Flow Sheet of Donnelly Brick Company's Plant, New Britain, Conn., Showing Progressive Steps From Clay Pit to Freight Car and General Equipment Throughout.

machine. The plant was rebuilt and in operation within 30 days after the fire. Some record for hustling!

Production Greatly Increased by Addition to Soaking Zone.

At first 36,000 brick were burned daily in the Dressler kiln, but by adding 30 feet to the combustion chambers to give a longer soaking zone the production was brought up to above 56,000 daily. The oil burning system was adopted last April, up to which time four burners only had been used, but this was found inadequate and the number was increased to six on each side of the kiln. But let us take up this particular phase of the operation at its proper time, and now trace the progressive steps of the material from bank to freight car.

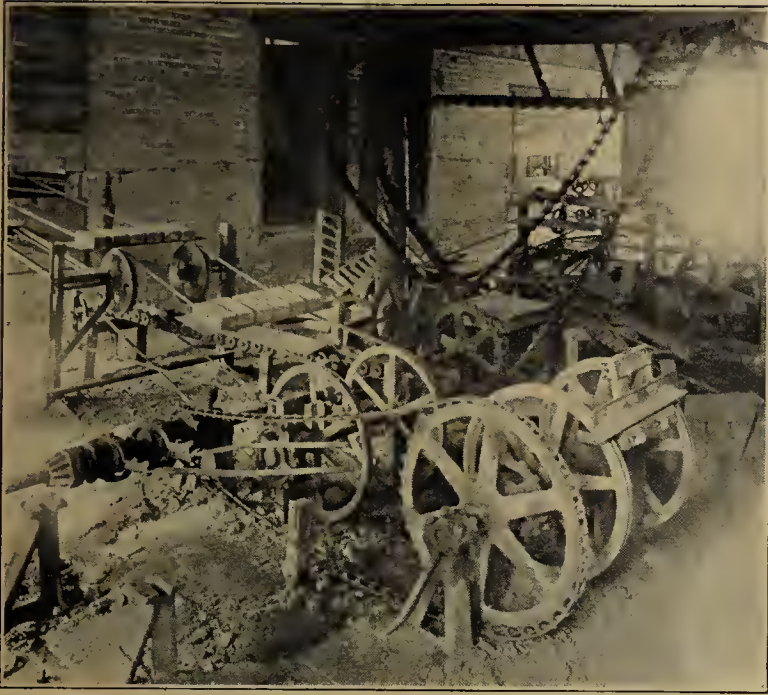
The clay is obtained from a 30-acre tract of clay land to the rear of the plant proper, this being 38 feet and over in depth, with practically no overburden, and is dug in two benches of

brick per minute. The work is done on the piece system, a definite quantity being made each day, enabling the men to finish their work on the average before 3 o'clock. This includes a 24-hour run for the Dressler Kiln and an extra quantity for burning on Sunday.

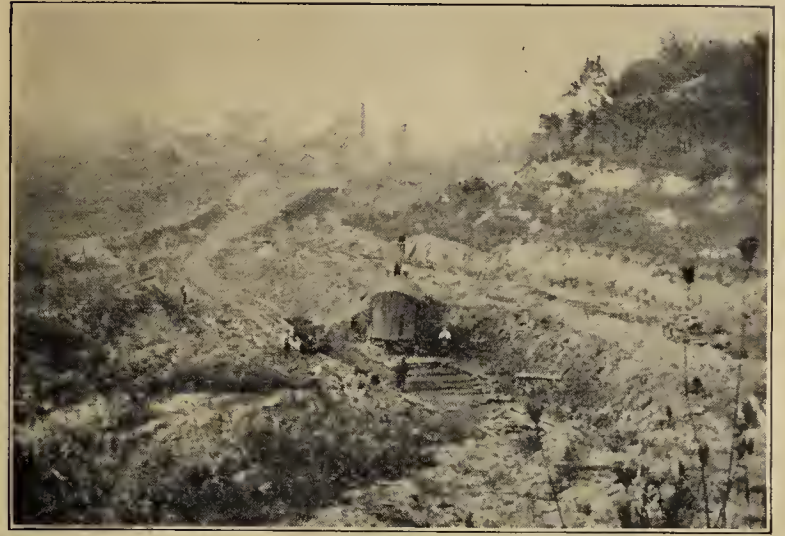
New Improvements Being Made.

At the present time they are installing a new unit that will be located on the left side of the old unit. This unit will consist of a complete outfit of Wellington Machine Company's automatic machinery, including clay feeder, disintegrator, pug-mill and automatic brick machine. This will more than double the green brick production and will eliminate several men usually required. A new building of brick and steel three stories high is being built, which will cover both the old and the new units. An incline for the new unit is also being con-

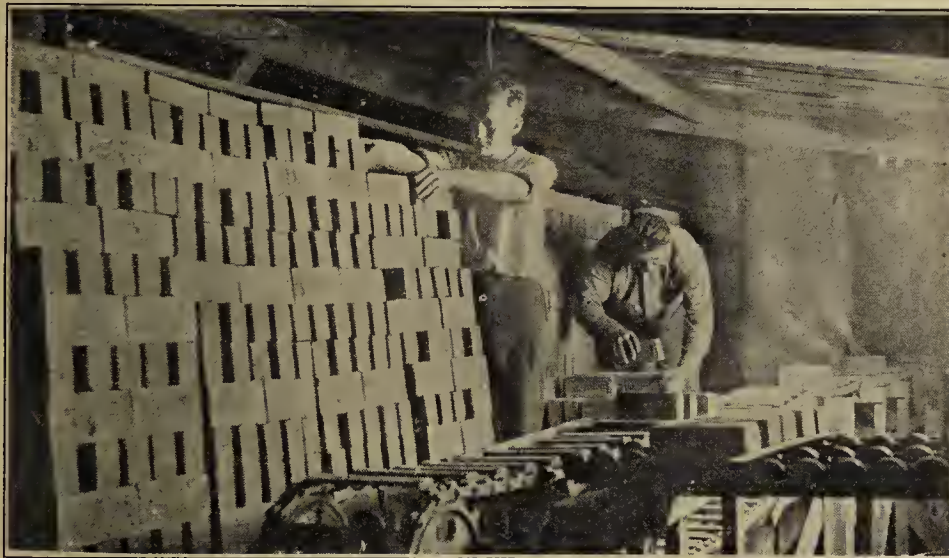
Views In and About the Plant of The Donnelly Brick Co., New Britain, Connecticut



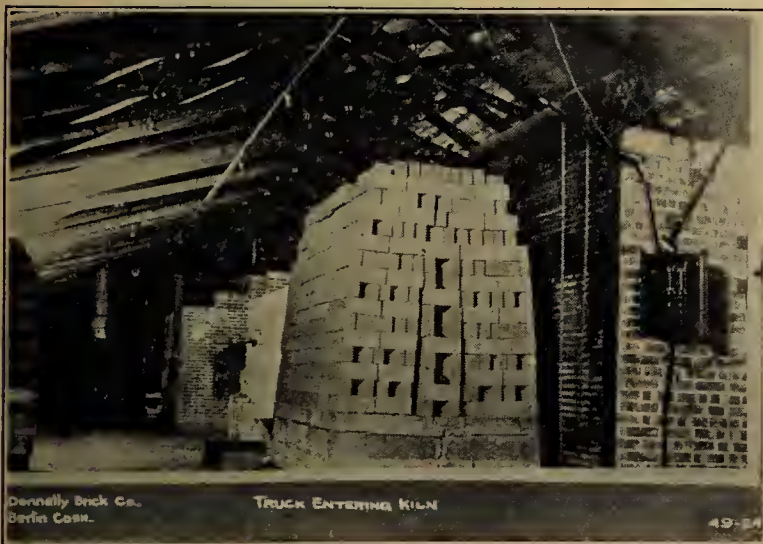
Conveyor System Near Machine. Showing Cables to Dryer Tunnels and Pallets on Lower Return Cables.



Clay Pit of Donnelly Brick Company's Plant, New Britain, Conn.



Loading Dried Brick From Wellington Pallet Conveyor on to Dressler Kiln Car, 1,800 Brick to Each Car.



Car of Pre-heated Brick at Entrance of Tunnel Kiln.



Burned Brick Leaving Kiln, High Quality, No Spoilage.

structed. The new building will be completed about the first of the year, and by the middle of January the Wellington outfit will be in operation.

Automatic Equipment Saves Time and Labor.

From the machine the pallets of brick are carried on cable conveyors into either of the two tunnels of the Wellington dryer, where the pallets of brick are removed and placed in racks of steam pipes where they receive the preliminary overnight drying. From the dryers the conveying system curves to the left, circles around to the belt conveyor running parallel to the kiln car return tracks. As brick pass over this conveyor belt they are removed from the pallets and set on the adjoining kiln cars, the empty pallets continuing on their return to the brick machine over the lower conveyor cables.

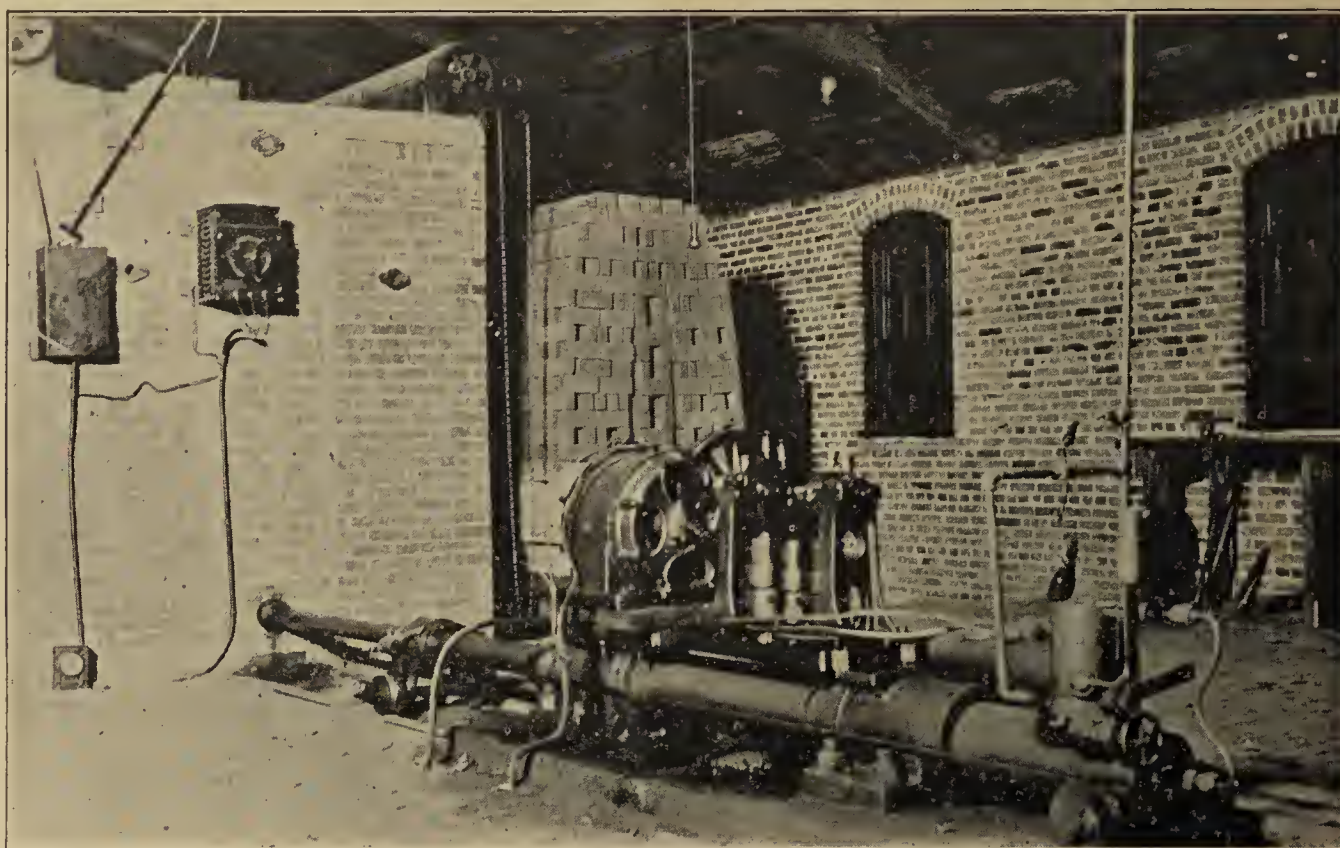
Brick Pre-heated in Dressler Dryer.

Brick are set in definite uniform fashion on the kiln cars, 1,800 brick to the car. Forty-two of these cars are constantly

enough for the transfer car, bearing a loaded kiln car, to be run into position. The hydraulic propeller is then started and the new car of brick is pushed into the kiln and at the same time moving entire forty-two cars one car length ahead, thus pushing one car of burned brick out at the discharging end of kiln tunnel. As stated before, 27 cars are put into kiln every twenty-four hours. While the normal plant production per week is 288,000 brick, 328,000 brick schedules have been carried through the kiln with very satisfactory burns invariably resulting.

American Dressler Tunnel Kiln.

This Dressler Tunnel Kiln is 276 feet long, and as shown in the chart a heat of 600 degrees is maintained at the receiving end. The cars in their movement forward gradually pass into increasingly higher temperatures until the soaking zone has been reached in the central third of the kiln, where the highest temperature is maintained, and after passing through this zone they go into gradually decreasing temperatures until



Hydraulic Propeller Used in Pushing Forward Forty-three Cars of Brick in Dressler Tunnel Kiln.

in the kiln, 27 being put in and 27 removed each 24 hours. A surplus of loaded cars is kept on storage track extending along the right hand side of the kiln, as shown in plant layout illustration, for use during night burning and during week-ends. In their passage from the loading track to kiln entrance the set cars as needed are pushed through an American Dressler Dryer and Pre-heater, where the temperature is raised to 400 degrees to make brick bone dry. Waste heat from the cooling end of the kiln is forced into the drier by means of a Clarage fan. This finishing tunnel drier, utilizing waste heat from the kiln only, covers a portion of the kiln return track. This dryer holds thirteen kiln cars which satisfactorily completes the drying process without any cost of maintenance, or resetting of brick on or off the kiln cars.

A car of pre-heated brick is taken from the drier and pushed to a point in front of a hydraulic propeller located on direct line with tunnel of kiln. The steel (Kinnear) roller door that closes receiving end of tunnel is rolled up just long

the burned ware has cooled to about 600 degrees at the discharge end of the kiln.

Burning Brick With Oil.

Oil burners of American Dressler design were made locally from standard pipe fittings, and are of the steam atomizing type. They give very little trouble for, being both air and steam-cooled, the great difficulty of carbonization of the oil in the burners themselves or at their tips so often met with is avoided. All oil valves at the burners are calibrated, thus greatly facilitating operation and control. Six burners on each side of the kiln insure adequate burning temperatures and maximum temperature flexibility.

Uniform burning temperatures are achieved by the very complete pyrometric system in use. A platinum-rhodium thermocouple placed directly in front of each burner and in the path of the oncoming burned gases enables the operators to guard against any material change in the crown or burning

temperatures of the kiln, the latter being indicated by base-metal couples projecting through the arch at required intervals in the length of the kiln. This pyrometer system was furnished by the Brown Instrument Co.

Duplicate Equipment Throughout Oil System.

In the oil house (see illustration of same) all important mechanical units, such as pumps and strainers, are provided in duplicate, so that continuous operation is assured. This is true even to the steam supply used for atomization and oil heating, steam lines being so run that in case operation of the 50 h. p. tubular oil fired boiler, provided expressly for this purpose, is interrupted, steam pressure from the plant boilers can be turned into the system instantly.

Ample reserve oil supply is assured by three oil storage tanks, each of 20,000 gallons capacity. These are made communicating in such a way that oil may be withdrawn from any one of them and the heated oil delivered by the pumps in excess of the amount used may be returned into any one

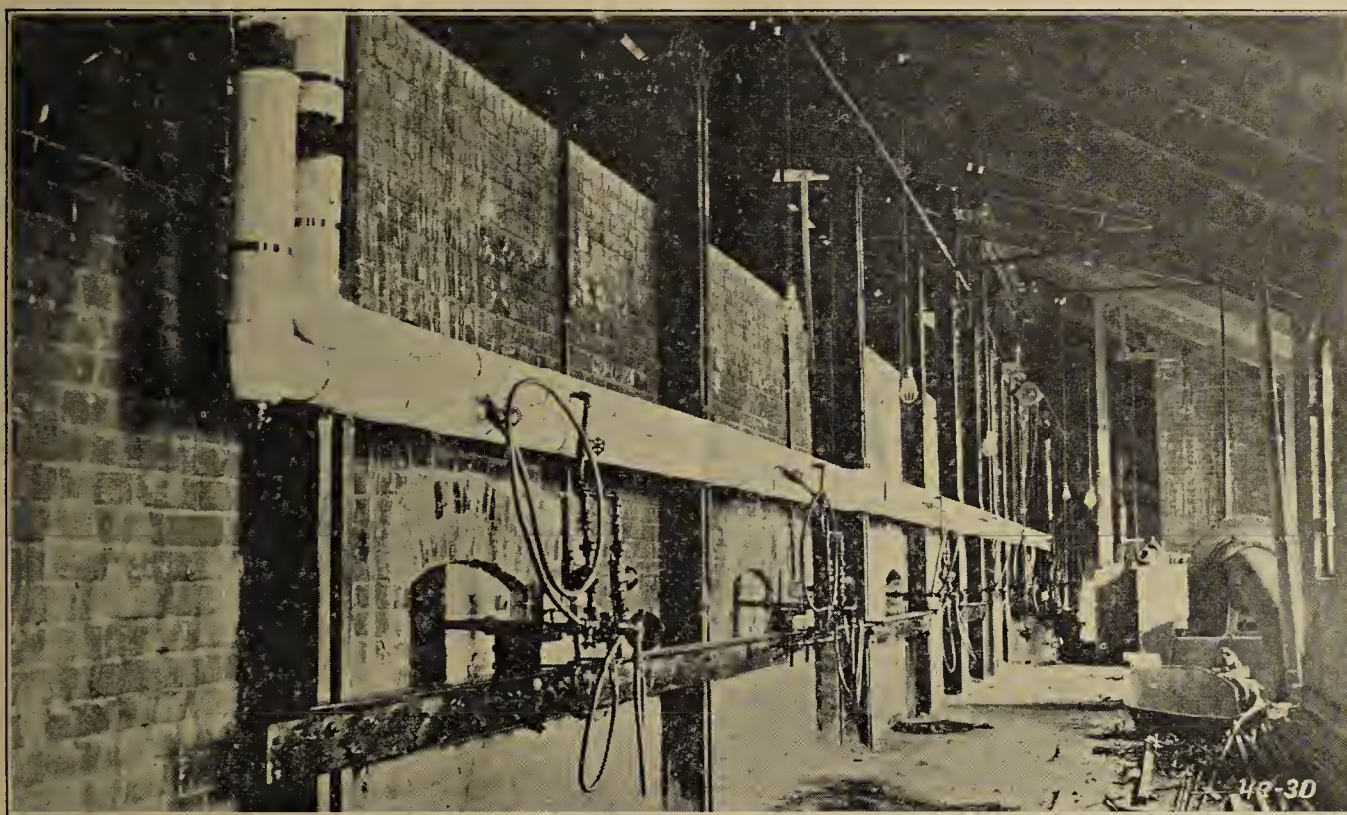
as often as desired. Constant pressure of the steam used for atomizing is assured by Mason Steam Pressure Regulator having a five-pound to maximum line pressure range.

The three oil tanks are located sixty feet back of the oil house. Equidistant between the tanks and railroad tracks is a steam pump for pumping the oil from tank cars on siding through strainers to the oil reservoir tanks. The three oil storage tanks with steam heating coils, the electric driven oil pump and the meters and strainers were furnished by the Smokeless Oil Burner Co., Bucyrus, O. This company also furnished the oil burners used on the scove kiln on Donnelly plant where surplus brick are burned.

Coal Unloader Reduces Cost in Coal Handling.

Near the point where the tank cars are emptied is a 250-ton Galion Iron Works Coal Unloader, which has saved much time and labor in the coal handling on this plant. The coal is used for creating steam in power plant.

The power plant for running brick machine and conveying



Furnace Zone of Kiln, Showing Six Oil Burners, Steam and Oil Lines and Calibrated Valves.

of the three tanks or kept circulating through the kiln lines as desired.

An oil meter located on line before reaching the burners shows oil passing through, while a second oil meter located on the return oil line shows oil not used, thus the difference between the readings of the two meters gives the oil consumed. About ten times as much oil as needed is in constant circulation. The pressure gauge on oil line generally indicates 10 pounds. Approximately 960 gallons of oil are used every 24 hours of burning in the kiln, while 150 gallons are used in creating steam; 1,110 gallons of oil of 28-30 gravity are thus consumed for burning 56,000 brick. This is equivalent to less than eight tons of coal. The all-important consideration to be carefully taken care of in burning with oil is clean oil with steady pressure and constant temperature.

Uniform temperature of oil is afforded by a Powers Thermostatic Oil Temperature control, and two 0 to 450-degree Fahrenheit mercury thermometers placed in supply and return lines furnish the means for checking the oil temperatures

system consists of two 100 h. p. Dillon boilers and a 100 h. p. Fitchburg engine.

All other power used around the plant is electric and is furnished by the Connecticut Light & Power Company.

Morehead Steam Traps are used, which put the water back just as it turns from steam, when it is too hot for any pump to handle.

The emergency pump used is that of Dean Bros., while the heater is the Patterson-Kelly Company's.

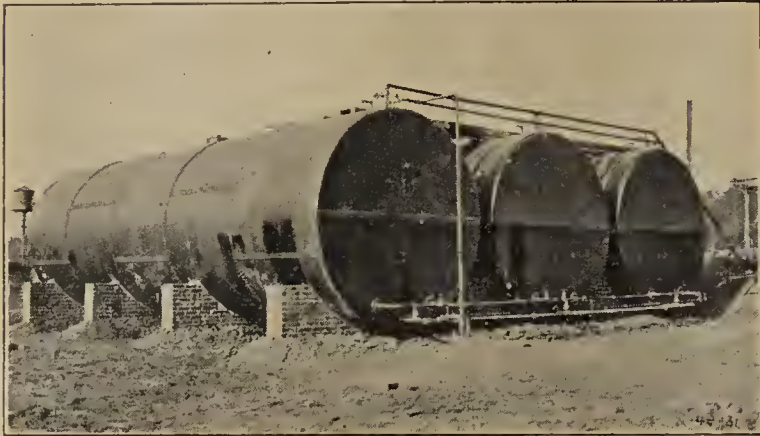
Overproduction is burned in scove kilns equipped with oil burners.

Sixty people are now employed on the Donnelly plant. The company owns six houses that they rent to the men.

One one-horse dump cart and a light Ford truck are used for cleaning up and light freight handling purposes.

In conversation with the writer Mr. Donnelly declared that he was well satisfied with all of his equipment, and especially was he gratified with the service rendered by the Dressler Tunnel Kiln. He declared that there is a marked improve-

ment in quality of the brick; the brick now are of the same uniform shade and size and the spoilage is practically nothing, while formerly the kiln loss was greater than $7\frac{1}{2}$ per cent. He declared that their clay is a very treacherous one, having



Three 20,000-Gallon Oil Storage Tanks on Donnelly Brick Co.'s Plant.

a range of only 20 degrees, for if burned to only a few degrees above the temperature at which good brick are burned they shrink and deform very abruptly. Therefore he made quite a study and thorough comparison of different types of kilns before he finally decided on the Dressler. The work the kiln



Duplicate System of Strainers, Pumps and Motors.

is doing for the Donnelly Brick Company certainly seems to justify the confidence put in it.

Brick Plants of Connecticut.

Besides the Donnelly Brick Co.'s plant, there are twenty-five other brick plants in Connecticut, totalling over 200 million brick annually. However much we would care to do so, space will not allow us to make complete descriptions of all of these plants. The following brief outlines do not give the plants the full credit they deserve, but will suffice until a later day, when we hope to publish illustrated write-ups of same.

One of the largest single plant producers of brick in Connecticut is the Tuttle Brick Co., with plant located at Middletown, Conn.

Plant of the Tuttle Brick Company.

Forty million common brick and 500,000 hollow brick are made annually at this plant. This is a 365-day plant. The clay deposit consists of 200 acres of a plastic surface clay ranging in depth from 20 to 60 feet. A Thew shovel is used

in the winning of the clay. It is taken in Western Wheel Scraper Co.'s dump cars to plant proper and thence through Eastern Machinery Co.'s clay feeder, pug mill and brick machine. Two AutoBrik machines, made by the Lancaster Iron Works, are also used.

A thirty-tunnel Standard Dry Kiln Co.'s dryer is used, wherein the brick are dried over night. Open yard pallet racks are also used, the drying in the open requiring six to eight days. Conveying machinery made by the Hadfield-Penfield Co., and Lancaster Iron Works are parts on the two units.

The ware is burned in scove kilns 15 to 20 arches, 12 to 36 hours being required to watersmoke. The Smokeless Oil Burner Co.'s oil burning system is used on some of the kilns. In kilns burned with oil, oil is used the first 60 hours and the kiln finished in 12 hours with wood as fuel. The kilns of brick burned entirely with wood require six days' firing. Asked regarding his opinion of the advantages of oil over

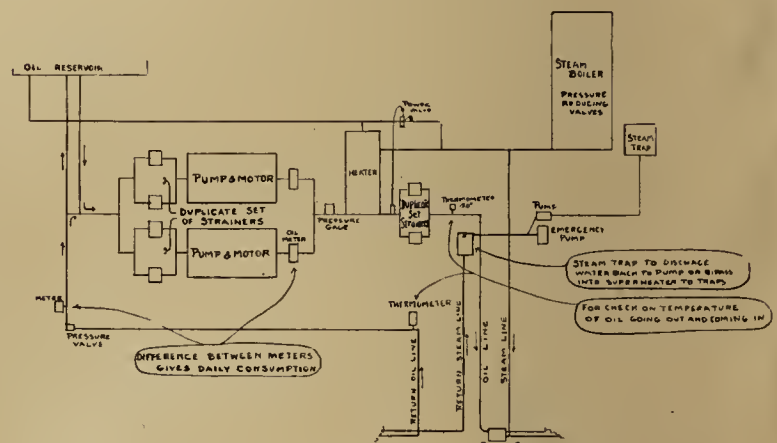


Heater, Duplicate Strainers, Etc., in Oil House.

other types of fuel, Mr. Wallace Tuttle, the general manager, declared that he found the cost the same in regard to oil and wood, but that oil burning saved time and labor.

Plants of the I. L. Stiles & Son Brick Company.

Perhaps the largest producer of common brick in the New England States is that of the I. L. Stiles & Sons Brick Company, for they operate two yards at North Haven, Conn., producing a total of 30 million annually, a plant at Taunton, Mass., known as the Stiles-Hart Brick Co., 8 to 10 million



Layout of Equipment in Oil House.

annually, and a plant at Bridgewater, Mass., known as the Bridgewater Brick Co., producing 6 million brick per year. The total output for all four yards ranges around 45 million annually. The two yards at North Haven, Conn., are unique

in several ways. The immense dairy and stock barns, while a side issue, is always a point of interest to the visitors. The main yard producing 22 million annually, is a two-machine yard with drier and has been in the Stiles family since 1853, starting in with one million per year and working up to present output. This is located only four miles from the New Haven market, with easy access to same being located on the Hartford Division of the N. Y., N. H. and H. R. Railway. There is a thirty-foot bank of clay, many acres in extent. At present the brick are made on two New Haven machines with same make of clay feeders and pug mills.

The clay is dug with an Erie shovel and taken to plant in a Fate-Root-Heath Co. Plymouth locomotive. The ware is dried in a three-tunnel Martin pipe dryer and burned with oil in a scove kiln. Anderson and Son's conveying system is used, while the oil burning system is that of the Smokeless Oil Burner Co. It requires 20 hours to watersmoke and 70 hours to finish the burn.

Mr. D. B. Andrews, the general manager, had been associated with Mr. Stiles and Mr. Reynolds for nineteen years. Mr. Stiles died in May, 1922. Mr. Reynolds resigned last May to take over the Stiles-Reynolds plant at Berlin, Conn.

works successfully on the Taunton yard, they will install the compressors at Bridgewater. Mr. Andrews declares that there is a saving of 25 per cent in the use of oil, to say nothing of time and labor saved.

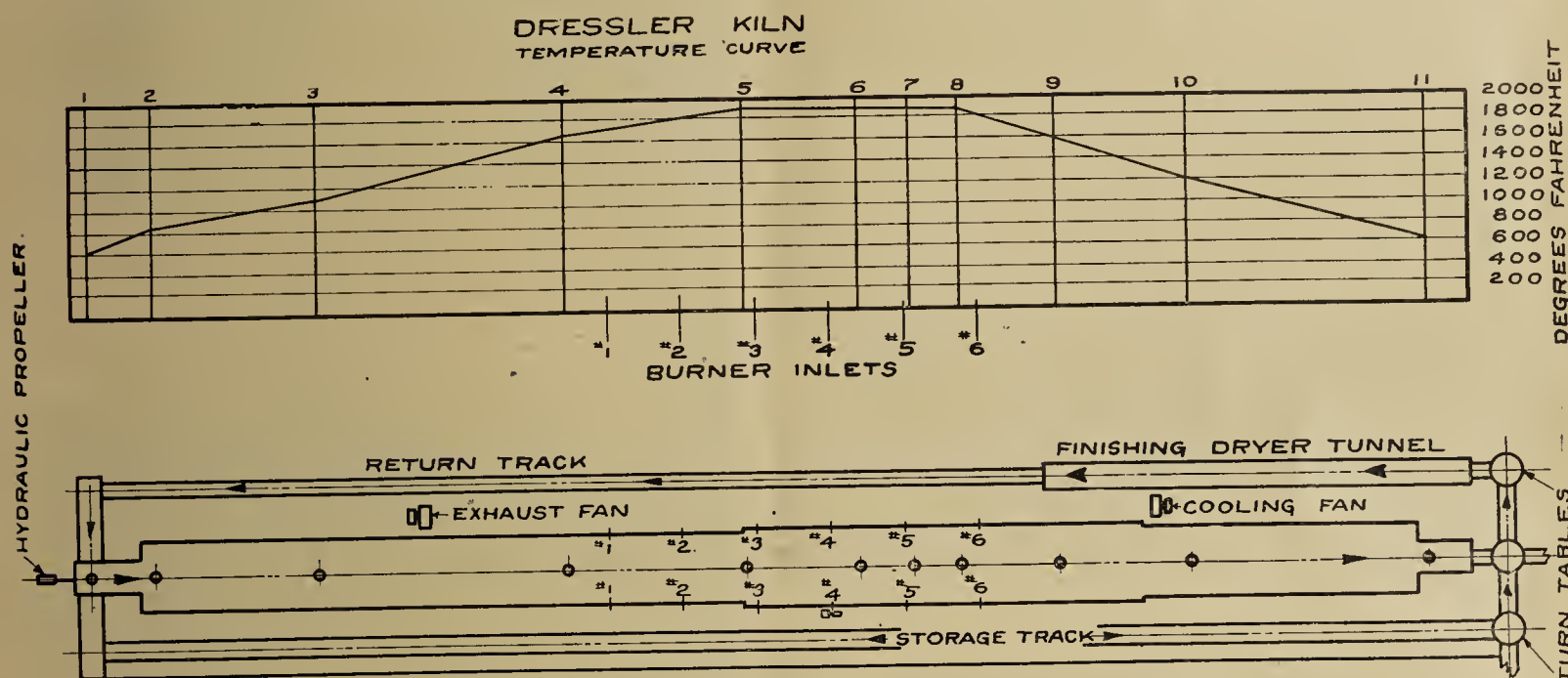
Their brick are used throughout the entire building. They load cars with face brick in one end and good hard brick for backing up at the other end of the car.

Plant of the Stiles-Reynolds Brick Company.

This is a stock company organized in 1909, under the laws of Connecticut. Mr. J. F. Reynolds, a progressive live wire, who has a host of friends throughout the country, due to his active interest in associational work, is the president and treasurer. The plant is located about three-quarters of a mile north of Berlin Station on the main line of the New Haven R. R., Springfield to New York.

The quality of brick made on this yard is high class, recently tested in Cleveland, they stood a crushing strain of nearly 6,000 pounds per square inch, more than double the ordinary building requirements.

The clay is obtained from a 100-acre tract of fine clay land, averaging 18 to 20 feet in depth, of fat, rich clay, which makes



Sketch of Dressler Tunnel Kiln and Corresponding Temperature Curves.

The two superintendents are George Dow and Samuel Bannell, the latter being a pioneer, working for the company for 34 years and although now 82 years old is around the plant daily. He burned brick up to the past year. He is a jolly individual, of best character and habits and the company's officials declare much of their success is due to Mr. Bannell.

This plant will install shortly an AutoBrik machine made by the Lancaster Iron Works. Extensive repairs and alterations will be made during the winter. The other yard at North Haven is a summer yard, producing eight million. Here the Eastern Machinery Co.'s machinery is used as is also the Anderson Conveying system. They are remodeling their Taunton, Mass., plant. Recently they installed a Sullivan Air Compressor there with intentions of burning with oil under air pressure. They have always used wood on this plant having several thousand acres of wooded land on hand at this time, so it is not scarcity of wood that turns their attention to oil. They have been burning with oil and steam for the past three months, with good results on their Bridgewater plant, but have reached the opinion that the substitution of compressed air for steam is much better, and if it

a high colored, strong, red brick. The clay in the bank is handled by a Thew electric shovel and is taken by a Fate-Root-Heath Co.'s Plymouth gasoline locomotive, gear driven, latest model, to Eastern Machinery Co.'s automatic feeders. The main machinery consists of two New Haven horizontal machines, one Chambers Bros. hollow brick machine and one Lancaster Iron Works AutoBrik machine (large size, latest model).

It is equipped with racks for summer drying and a Martin pipe rack dryer for winter use. Anderson & Sons conveyors are used for taking brick from any one of the several machines, to any point on the yard. Each machine is driven by separate motor and electricity is used entirely for power in pumping water from clay bank as well.

The plant has recently been equipped with two new Bigelow boilers (300 h. p.) new stack, new kiln house, pumps, piping and fittings, all of the latest design.

Wood has been used for fuel in the past, but recently a complete oil burning system has been installed, consisting of Smokeless Oil Burner Co.'s equipment.

The plant is equipped with a small machine shop, wood-

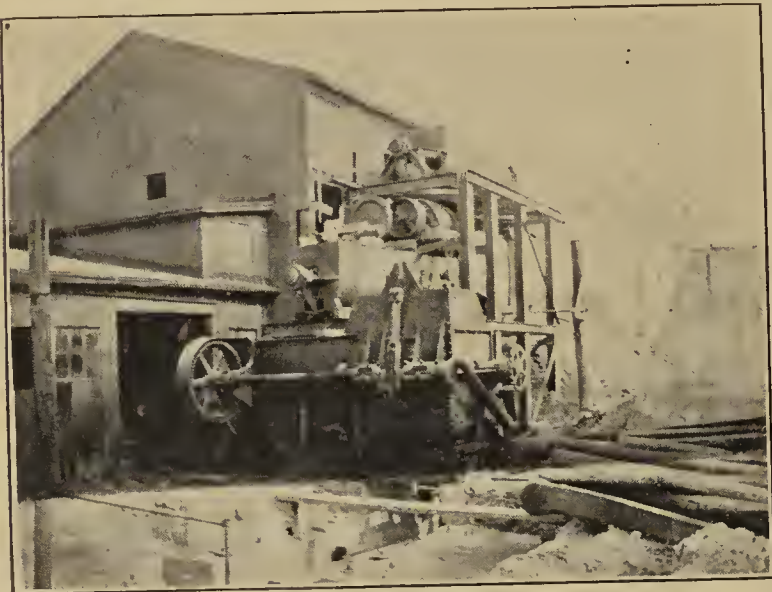
working plant and blacksmith shop, so that any ordinary repairs can be made promptly by mechanics in charge.

The company also has tenements enough to take care of more than half the employes. Machine sheds, brick sheds, office and in fact the entire plant is electric lighted. With the improvements now being made, it will be one of the most up-to-date practical clayworking plants in the east. The capacity of the plant is 120 thousand per day in summer and 65 thousand in the winter.

The officers of the company are: J. F. Reynolds, president and treasurer; John E. Reynolds, secretary and assistant-treasurer; C. E. Reynolds, vice-president, and M. A. Reynolds, assistant secretary.

Plants of R. O. Clark.

One of the largest representative concerns in Connecticut is that of the Eastern Brick Co., East Berlin, Conn., the selling organization for the three plants of R. O. Clark & Sons Brick Co. and Aetna Brick Co., of East Berlin, and C. P. Merwin Brick Co., Berlin, all of which are chiefly owned by R. O. Clark, a live wire who put on a complete building show all by himself last year, as chronicled in *The Clay-Worker*.



Wellington Automatic Outfit Being Installed.

These three plants produce annually approximately 40 million brick.

The C. P. Merwin brickyard at Berlin, with an annual production of from 15 to 20 million, has a 25-ft. depth clay bank and is equipped with Marion shovel, New Haven equipment for one unit, and Lancaster AutoBrik equipment for a second unit; a Chambers Bros. hollow brick machine, Western dump cars and Anderson conveyors. The brick are dried in open racks and burned with wood in scove kiln. An oil burning system will be installed in the near future.

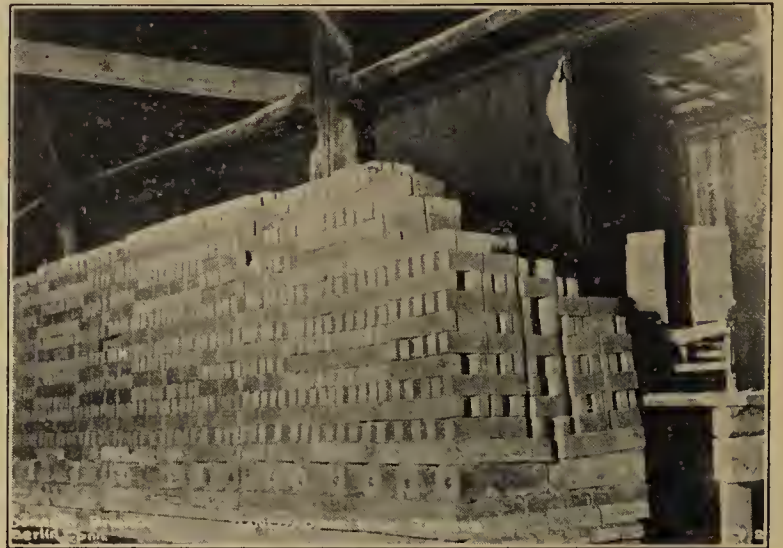
Connecticut Light and Power Company furnishes electric power for equipment in general. R. O. Clark is president; F. G. Vibberts, treasurer, and E. C. Robbins, secretary.

The Aetna Brick Co., the officers of which are R. O. Clark, president and treasurer, and H. R. Clark, secretary, operates a plant at East Berlin. The output here is 10 million annually. This is a summer yard, using a Marion shovel, New Haven clay feeder, pug mill and brick machine, Whitcomb locomotive, Anderson conveyors. The electric power is furnished by Northern Connecticut Light and Power Co. The brick are burned with wood in scove kilns.

The R. O. Clark & Sons plant is located in East Berlin, and produces from 15 to 20 million brick annually. Sixteen feet depth of surface clay is found here. A Marion steam

shovel digs the clay and loads same into Western dump cars, which are taken to plant by a Whitcomb locomotive. There are two units, one consisting of a New Haven granulator, Potts crusher, New Haven combination pug mill and brick machine, and Potts sander. The brick made on this unit are dried on open racks.

The second unit consists of Lancaster granulator, double compound crusher, pug mill and Autobrik machine. The brick from this unit are dried in a Lancaster Martin steam dryer. The ware is burned with wood and oil in scove kiln set 52 to 56 high. The Smokeless Oil Burning System is



Sixty-two Hours After Clay Leaves Clay Pit.



Rack Yard and Anderson Conveyor on Typical Connecticut Plant.

used. Electric power is furnished by the Connecticut Power Co. Westinghouse equipment is used.

The officers are: R. O. Clark, president, and treasurer; H. R. Clark, vice-president, and E. C. Robbins, secretary.

Plant of Wm. E. Davis & Company.

This company owns and operates a plant at foot of Benton street, Hamden, Conn., a short distance from North Haven. This is a summer yard, producing about seven million brick annually. There is a large acreage of surface clay averaging 20 to 25 feet in depth, which is dug by means of an Erie shovel. A Plymouth gasoline locomotive is used for hauling clay dump cars to plant proper. Two units of Eastern Machinery Company's equipment and Anderson conveying machinery are used. The brick are dried in open racks, wheeled from racks to kilns and burned with wood.

The kilns are set 10 to 30 arches, two days being required for water-smoking, one week to complete burn. The general manager and superintendent is Burton A. Davis.

Plant of Wilson Brick Company.

The plant of this company is located at Wilson, Conn. It was established in 1855. The present output is six million annually. There is an unlimited amount of gray surface clay averaging 25 feet in depth. A drag line excavator is used in winning the clay. This is operated by steam. The New Haven pug mill and brick machine are used here, and are operated by electricity. The brick are dried in open racks, and after seven days drying period are burned in scove kilns, water smoking requiring 12 hours and burning four to five days.

The other common building brick plants in Connecticut are: Berlin Brick Co., Berlin; Brower & Best, Thompsonville; The Charter Oak Brick Co., Elmwood; Connelly-Purrington Brick Co., Clayton; East Windsor Hill Brick Co., East Windsor Hill; Hall-Spiers Brick Co., Berlin; E. W. Mack & Son, Windsor; MacDonald Brick Co., Westfield; Michael Kane Brick Co., Hartford; Montowese Brick Co., Montowese; Fred I. Shares, North Haven; Sponzo Brick Co., Hartford; F. H. Holmes, Berlin; Richard Murray Brick Co., Berlin; The Towers Brick Co., New Britain, and American Brick Co., Berlin.

J. E. R.

WESTERN TEXAS BRICK PLANT.

CENTRAL WEST TEXAS is turning its attention to the development of some of its other natural resources now that the ranch and the large farm are no longer as profitable as they once were. The discovery of oil and gas, although in moderate quantities, has served to lessen the burden of drought and unfavorable markets, but the progressive business men of this section are prospecting in mining and manufacturing in order to open up new sources of trade and investment.

A good many years ago it was found that large deposits of brick clay existed all over this section of the state, but only in recent years has the manufacture of brick become a paying business. The time-worn saying that "A prophet is not without honor save in his own country" seems to apply to industry as well as to prophets. People are always timid about patronizing a home enterprise that is new. Accordingly, it took years of hard work, constant advertising and good salesmanship to convince the building public that first-class brick and tile could be manufactured at home and sold at a price that would overcome outside competition.

The Brownwood Brick & Tile Company, at Brownwood, is typical of the plants in Central Texas. Its early development and progress are interesting in the light of the recent increase in building in this section of the state.

Fifteen years ago a factory site was chosen on a small lot at the foot of the hills adjoining the city limits. The clay was dug from a gradual slope after a shallow layer of the surface soil had been removed. After a year or so this excavation grew in depth from four to twenty feet, and became a valuable water reservoir which has continued to supply the plant. A few years later the supply of clay immediately at hand was exhausted, and a new pit was opened on the side of Round Mountain, which is several hundred yards from the kilns. Today the plant covers nearly four acres, and consists of an office building, power house, grinder, press and five kilns. The concern is incorporated and represents an investment of over \$25,000. Both common and face brick are manufactured by the "dry" process, which gives them unusual durability and smoothness of texture.

A force of fifteen men operate the Brownwood plant, whose

output is 2,000 brick per hour. Scores of mercantile and public buildings and residences in Brownwood and over a large area of surrounding territory have been constructed of brick from this factory.

Mr. Hal B. Hardeman, manager of this plant, says that the unusual natural advantages which the plant has enables them to contribute with mutual profit to economical building in their territory.

SEEN IN NEW JERSEY.

SEASONAL BRICK YARDS at Hackensack, N. J., have closed for the season, and the majority of the yards have enjoyed a good run and correspondingly good business. Orders now coming in are going to deplete the reserves, but there is a good supply of material on hand, and to all appearances sufficient to take care of requirements during the winter period. The plants will soon commence to clean up, and a number of improvements are in contemplation for the early months of the coming year. The steam dryer plants in the Trenton section are maintaining a fair degree of activity. There is not quite the business at hand that producers would like to see, but incoming orders for early construction indicate a gradually increasing trend in trade. The majority of manufacturers look forward confidently to 1924 business.

As a result of the two fires in the Raritan River section, recorded in the last issue of The Clay-Worker, it is likely that new plants will be erected in both instances. The National Fire Proofing Co., Perth Amboy, is cleaning up the debris caused by the fire at its plant, with loss reported at \$500,000, including buildings, equipment and stock. The company is said to be perfecting plans for the early reconstruction of the plant, estimated to cost approximately the amount of the fire loss. At Keasbey, the Raritan Hollow Tile Corporation has commenced the rebuilding of its local work, destroyed with a loss estimated at close to \$100,000, including building and equipment, and purposes to have the new structure equipped and ready for service early in the new year. Robert Lyle is general manager of the last noted organization.

There was an unusually fine display of ceramic products at a recent exhibit of local industries at Perth Amboy, N. J., held under the auspices of the foreign department of the Perth Amboy Trust Co. The show was open for two weeks, from early in the morning until 9 o'clock at night, and was visited by hundreds of people from this and neighboring sections. Among the exhibitors of burned clay products were the Perth Amboy Tile Works, Atlantic Terra Cotta Co., General Ceramics Co., Seaboard Refractories Co., M. D. Valentine & Brother Co. and the South Amboy Terra Cotta Co. The Roessler & Hasslacher Chemical Co. also had an interesting exhibit.

The General Ceramics Co., Metuchen, N. J., is running full at its local No. 2 plant, devoted to the manufacture of sanitary ware, and will likely continue on this basis for an indefinite period. The company is now operating its new Shaw gas-fired kiln, the first of its kind to be constructed in this country, and with decidedly favorable results. Other improvements have also been made at the plant under the direction of R. H. Minton, general superintendent, for greater efficiency in production.

The American Fused Silica Corporation, New Brunswick, N. J., recently organized with a capital of 10,000 shares of stock, no par value, proposes to operate a plant in this vicinity for the manufacture of fused silica ware, using certain patents of Armin Forst, Fords, N. J. The new company is headed by Whitfield Farrington, Richard F. Potter and Paul W. Ewing, all of New Brunswick.

A. R. L.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



THE BUREAU OF PUBLIC ROADS, Department of Agriculture, reports that under the Federal aid plan for the improvement of roads, brick-paved highways have already been constructed in nearly all sections of the country, at a cost up to October 1, 1923, of \$17,885,909.77. Of this total the government paid \$5,831,732.82, the balance being paid by the respective states. The cost of the brick-paved roads per mile was \$45,500, this being the average figure, the cost in some sections of the west being considerably above this amount. Other materials used for road construction, cement concrete and bituminous concrete, cost, respectively, \$38,400 and \$33,000 per mile.

The states of Ohio, Indiana, Illinois, Michigan and Wisconsin lead all other divisions in the use of brick for road paving, the total for these states being \$8,274,769.94, or almost 50 per cent of the total for the entire country. In the states of Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas \$5,713,294 has been spent for brick roads, while in the South Atlantic states of Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia and Florida the total for brick roads is \$1,417,185.74.

In cooperation with an advisory committee composed of producers and consumers of refractories, the U. S. Bureau of Standards has undertaken the establishment of specifications to be used by the government departments in the purchase of these materials.

An important part of this work, which is now nearly completed, deals with refractory brick for the lining of stoker-fired boiler settings. Brick of many representative brands were subjected to tests suggested by the advisory committee, and the results of these laboratory tests were then correlated with service records on brick of the same brands, gathered from various power plants.

The brick tested represented 42 brands supplied by users in all of the important industrial districts of the country. Specimens have been subjected to the standard and modified load tests, and the endurance, constant volume and quenching tests. Absorption tests before and after various heat treatments were carried out, and the fusion points and chemical composition were also determined.

The results of the load tests checked closely those obtained in previous investigations, and show clearly the relative behavior of brick from various districts in the United States. Results of the investigation also indicate a close relation between chemical composition, fusion point and resistance to sudden temperature change, and these also agree quite satisfactorily with the results of the endurance and constant volume tests.

The laboratory work has been completed, the necessary service data obtained, and the results correlated. Proposed specifications were drawn up during the past month and discussed fully at a conference composed of the Federal Specification Board's subcommittee and the advisory committee on refractories. It is evident that a most important advance step has been taken in preparing a set of specifications based on the results of service tests, rather than merely the quality of the material.

An improved apparatus for the transverse testing of brick has been designed by H. L. Whittemore, of the U. S. Bureau of Standards. During the month of November 500 brick were tested to determine whether this apparatus was superior to that specified by the American Society for Testing Materials. Two hundred and fifty brick were tested in each apparatus.

The bricks were of three different kinds, 200 being clay brick, 200 cement and 100 sand-line brick. The average results were practically the same for both types of testing fixtures, but with the Whittemore apparatus it was possible to test 100 brick in 3 hours, while 5¼ hours were required to test the same number with the A. S. T. M. fixtures. With the latter apparatus five pieces are displaced when a brick is broken, and these must be accurately replaced in position for the next test. There are no displaced parts when a brick is broken in the new holder. Since both devices give equal results for the modulus of rupture of a brick, and since the A. S. T. M. fixture requires more time, the new apparatus is evidently an advance in the field of testing equipment.

The Department of Commerce reports that the clay fire brick production of 61,265,000 brick in October, 1923, compares with 55,839,000 brick in the preceding month (September), and 55,996,000 in October of last year. Silica brick production in October, 1923, totaled 12,124,000 bricks, as against 9,967,000 in September, and 15,755,000 in October, 1922. Face brick output in the past October totaled 25,805,000 bricks, as against 21,862,000 in September and 28,555,000 in October, 1922.

A final decree ordering the dissolution of the Tile Manufacturers' Credit Association, sought in injunction proceedings brought by Attorney General Daugherty, has been entered in the United States District Court in Columbus, Ohio. The announcement of the decree which has just been made by the Department of Justice here, says that members of the association, which the Attorney General's petition charged was organized primarily to establish and maintain uniform prices, are restrained from hereafter organizing any similar association.

Men in Every Walk of Life Take Up Bricklaying.

Large numbers of Washington government clerks are taking up bricklaying; likewise many contractors and architects. This is the statement of E. A. Drumm, principal of the Y. M. C. A. trade school here, in announcing the formation at the association's building on G street of large bricklaying classes on Mondays, Wednesdays and Fridays.

"Men of many vocations are taking up bricklaying," Principal Drumm pointed out. "They include carpenters, contractors, architects, marble setters, government clerks, bookkeepers and store clerks. So large are the classes that a placement bureau has been organized and graduate workmen will be placed whenever a demand arises for bricklayers. A number of leading builders in Washington and nearby sections have agreed to employ every man who graduates."

Bricklayers are getting from \$12 to \$20 a day in Washington.

According to reports to the Department of Commerce there are now employed in the tile and brick manufacturing plants in India 51,000 men, while in the calendar year 1922 the number of brick plant employes in that country was 28,000.

All kinds of brick, as well as hollow tile, show remarkable increases in foreign shipments, according to information just available at the Department of Commerce. The exports in

Washington Service for Subscribers to The Clay-Worker

As a constructive feature for subscribers to The Clay-Worker only, our Washington Bureau will be glad to secure and forward any information desired relating to domestic or export trade in Clay Products and other materials from any government department or bureau. Requests should be accompanied by a stamped and addressed envelope and directed to Alfred T. Marks, Manager, Washington Bureau, The Clay-Worker, The Iowa, Washington, D. C.

these lines are going to a larger number of countries than ever before, and judging from reports received here these products are bringing better prices in the world markets than are shown by any previous export records. Following are the official export figures for the nine months of 1923 ending with September:

—Nine Months Ending September—

	1922		1923	
	Quantity.	Value.	Quantity.	Value.
Fire clay bricks.....	22,277	\$1,045,615	47,198	\$1,424,454
Other refractory brks	2,002	194,861	4,555	326,051
Refractory shapes	5,670,862	103,747	21,123,961	386,713
Bldg. bks and hol. tile	8,542	236,247	7,138	204,893

John H. Miller, one of the leading brick manufacturing concerns of the national capital, operating the Washington Brick & Terra Cotta Co., whose offices have long been located at 911 H street, N. W., has removed to a handsome suite of rooms in the new Insurance Building at Fifteenth and I streets, N. W. The firm's extensive yards and plants are located at Waterloo, Virginia, just across the Potomac river, south of Washington.

Prices prevailing in forty cities for common brick on November 1 are reported by the Department of Commerce as follows, per 1,000:

Scranton	\$25.00	Baltimore	\$20.00
Richmond	19.00	Fairmont	26.00
Columbia	12.00	Savannah	14.00
New Orleans	17.75	Pittsburgh	17.00
Erie	17.75	Cleveland	16.00
Akron	16.00	Lorain	21.00
Newark	18.00	Dayton	15.50
Grand Forks	15.00	Sioux Falls	18.00
Shreveport	15.00	San Antonio	14.50
Tucson	12.50	Sacramento	17.00
Los Angeles	15.50	Seattle	18.00
Portland, Ore.	20.00	Detroit	17.50
Pontiac	16.00	Bay City	18.00
Milwaukee	13.50	Waterloo	16.50
Des Moines	19.00	Council Bluffs	16.50
St. Louis	21.00	Kansas City, Mo.....	16.50
Fitchburg	24.00	Haverhill	24.00
Fall River	25.00	New London	27.00
Poughkeepsie	20.00	Albany	27.00
Rochester	17.75	Buffalo	23.00

Hollow building tile on the same date sold at the following figures (8x12x12):

Baltimore	\$0.24	Scranton	\$0.25
Fairmont	.26	Columbia	.17
New Orleans	.23	Pittsburgh	.20
Erie	.21	Akron	.17
Lorain	.17	Newark	.19
Dayton	.21	Sioux Falls	.19
Shreveport	.22	San Antonio	.22
Tucson	.18	Los Angeles	.20
Seattle	.20	Detroit	.20
Pontiac	.18	Bay City	.18
Milwaukee	.17	Waterloo	.17
Kansas City, Mo.....	.17	Fitchburg	.30
Haverhill	.30	New London	.32
Poughkeepsie	.23	Albany	.27
Rochester	.21	Buffalo	.21

ALTHOMAR.

WELLER MFG. CO. OPENS OFFICE IN BALTIMORE.

Mr. F. A. Klopp, a graduate engineer, is the new representative of the Weller Mfg. Co., Chicago, and will be located at 1401 Lexington Building, Baltimore, Md. He has the experience in material handling equipment, as prior to his connection with the above company he has represented and sold elevating and conveying machinery for several firms in the southeastern territory.

WITH THE POTTERS.

THE CONTROL of the Maddock Pottery Co., Trenton, N. J., operating the Lamberton China and Trenton China Works, has passed from the local Maddock interests to Charles A. May and D. William Scammell, president and vice-president, respectively, of the company, including a number of other members of the Scammell family. The plants are located in the South Trenton section and cover about 5 acres of land; they comprise a total of 16 large buildings and several smaller structures, with 23 kilns of appreciable size and 9 small kilns. The property was secured, it is stated, for a consideration close to \$750,000. The plants specialize almost exclusively in hotel and dinner ware, and have been running full continuously, giving employment to approximately 650 operatives. The new owners will make no immediate change, planning to expand the pottery as conditions may require. The Maddock Pottery name will be discontinued some time in the future, the selling agreement allowing the purchasers 5 years in which to make this change. It is purposed to organize a new company, with Mr. May assuming a position as chairman of the Board of Directors, and Mr. Scammell as president. Mr. May, with A. M. and H. S. Maddock and Moses Callear, founded the company many years ago. Other members of the Scammell family interested in the new organization are John R., Scott, Charles R. and Dr. Frank G. Scammell.

The Fraunfelter China Co., lately formed under Maine laws, has taken over the plants of the Ohio Pottery Co., Zanesville, Ohio, and the American China Co., Chesterton, Ind. It is said that a price in excess of \$1,000,000 was given for the two properties, which will be operated in close conjunction in the future. Headquarters of the new company will be established at the Zanesville works. Plans are under way for extensive operations, with possible extensions in plant facilities. It is expected to give employment to more than 500 men at the two potteries.

Plans are under way for a reorganization of the Summit Porcelain Co., Summit, N. J., for which Robert J. Murphy has been acting as receiver for a number of weeks past. Under the arrangement as now projected, preferred creditors, including employes, will receive their claims in full, while other creditors will be granted 50 per cent of the amounts due them and full settlement later. The new company proposes extensive operations, with close to normal working force.

The Standard Sanitary Mfg. Co., Bessemer Building, Pittsburgh, Pa., manufacturers of vitreous china and other sanitary ware, is having plans drawn for the construction of an addition to its pottery at Kokomo, Ind., for large increase in capacity. It will be one-story, 150x600 ft. approximately, estimated to cost in excess of \$200,000, with machinery. Continuing its expansion, the company has awarded contracts for initial work for its proposed new plant on property acquired a number of months ago at Fifth Avenue and Seventeenth Street, Baltimore. The pottery will consist of a total of 17 one-story buildings, with power house, machine shop and other auxiliary structures, estimated to cost more than \$2,500,000, including machinery. It is said that arrangements for the latter will be perfected at an early date, and orders placed. H. M. Reed is assistant general manager of factories, in charge.

The Homer Laughlin China Co., Newell, W. Va., is pushing construction on its new plant No. 6, and expects to have the unit ready for service shortly after the first of the year. Work on the decorating kilns is progressing satisfactorily, and the bisque kilns at the new plant are nearing completion. The new pottery will cost in excess of \$300,000, including equipment. The H. K. Ferguson Co., Cleveland, Ohio, has the general erection contract.

A. POTTER.

OIL FIRING CLAY PRODUCTS

By W. D. Richardson.

Part 4.

Pumps.

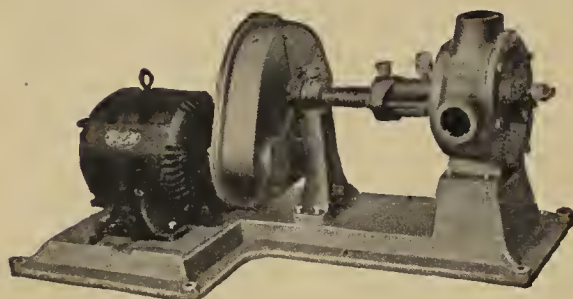
OIL PUMPS are of low or high pressure, electric or steam driven, of the piston or centrifugal type. Piston pumps should be equipped with air chambers of ample capacity to steady the pressure and give an even flow of oil to burners. With piston pumps it is generally advisable to place auxiliary air chambers on the line between the pump and burners. Recent installations have the small centrifugal



Oil Meter.



Oil Strainer.



Oil Pump.

Above Furnished by Smokeless Oil Burner Co.

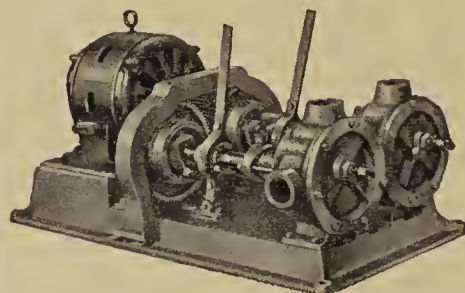


Fig. 6. Showing Viking Duplicate Oil Pump and Simple and Efficient Principle of Same.

pump, giving a constant pressure without pulsations. In fact, this seems to be the standard installation today. Such a pump, the Viking pump, shown in Fig. 6, is furnished in the East by the Schirmer Co., Cleveland, O. These oil outfits consist of two pumps with means for driving them. Each pump operates independent of the other. Either can be started or stopped without shutting off the power. The continuous circulation of oil is important with heavy oils to maintain proper temperature for atomizing, and especially to avoid any accumulation of coke in the oil lines.

Blowers or Air Compressors.

Where air under pressure is employed for atomizing the oil an important part of the equipment is the blower, where

low pressure is used, or an air compressor, where high pressure is required. The use of air above 5 lbs. involves the use of piston-driven compressors, which are objectionable on account of the high cost of installation and operation. Therefore, the tendency is to use lower pressures, and for this the favorite equipment today is the Spencer Turbo-Compressor

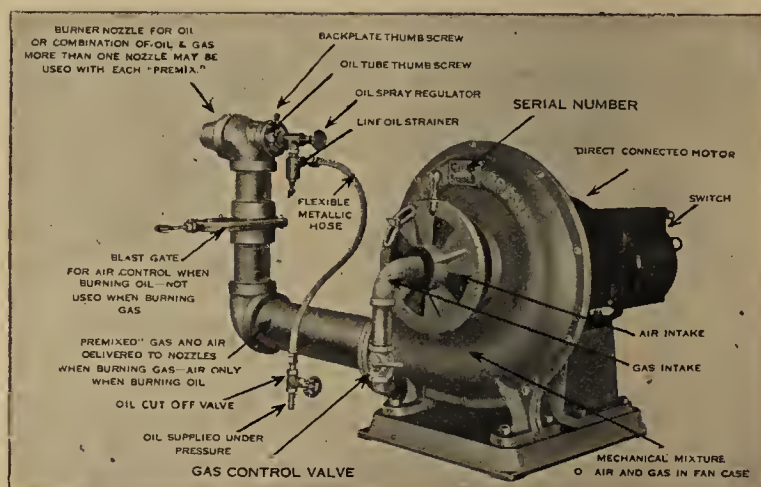


Fig. 7.

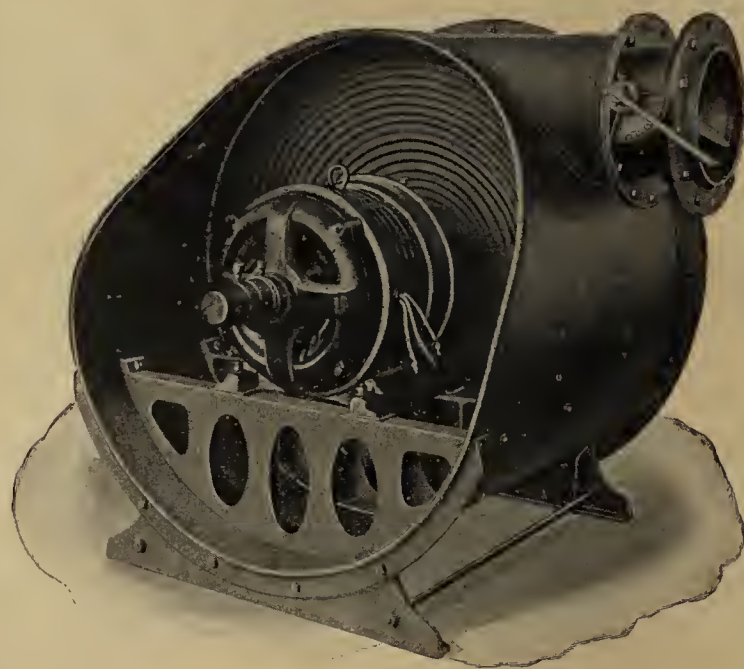


Fig. 8.

shown in Fig. 7, made by the Spencer Turbine Co., Hartford, Conn. A pressure of a few ounces is generally sufficient.

Where oil and gas are both used, that is, natural gas when it can be had and oil at other times, the equipment generally used is the Maxon Premix Burner with the Maxon Premix Equipment, Fig. 8, made by the Maxon Furnace & Engineering Co., Muncie, Ind. Pressure gages are placed on the heater and also are often located at the pumps and at the burners.

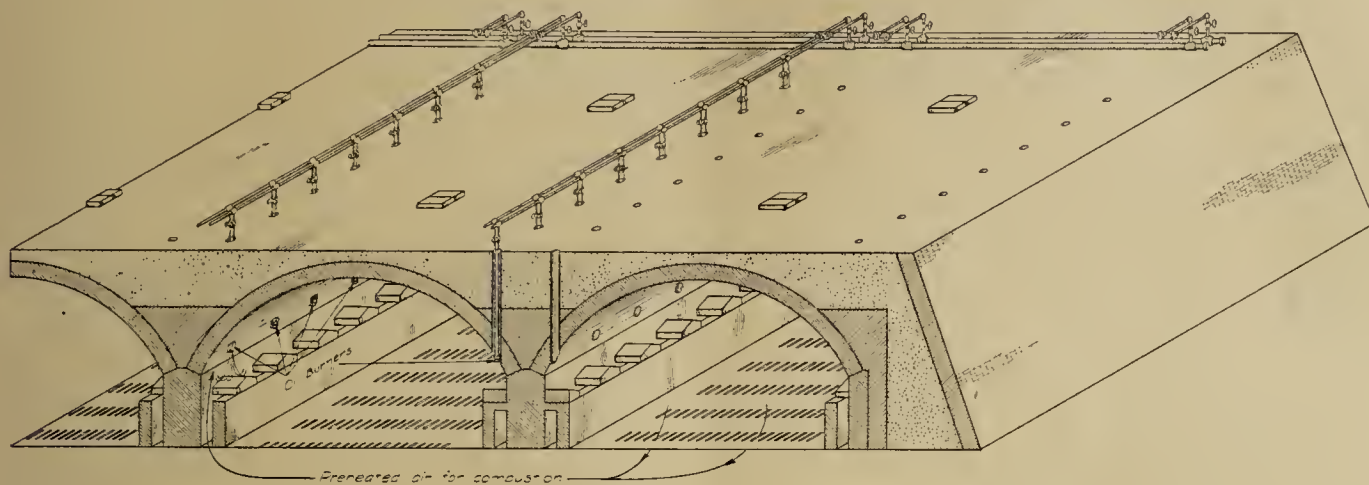
Thermometers should be placed on the pump suction between storage and heater and also on the heater outlet. Automatic temperature and pressure controllers are often provided for the heaters.

Regenerative Kilns for Oil Firing.

New kilns today for any fuel should be fully regenerative, the air for combustion being heated by passing through bricks that have been burned and are cooling, and the brick in the compartments ahead of the fire being preheated by the hot gases from the compartment under fire. To get this complete regeneration some form of continuous kiln must be used. The two most practical forms for general use and

vent over-firing of the ware nearest to the fire. Also the hottest fire being nearer to the top of the kiln, the bottom of the bag is not so hot and hence the bottom of the kiln loses the advantage of heating up by radiation from bag wall. This form of kiln when fired with oil is more difficult to operate so as to get hard burnt ware in the lower part of the kiln.

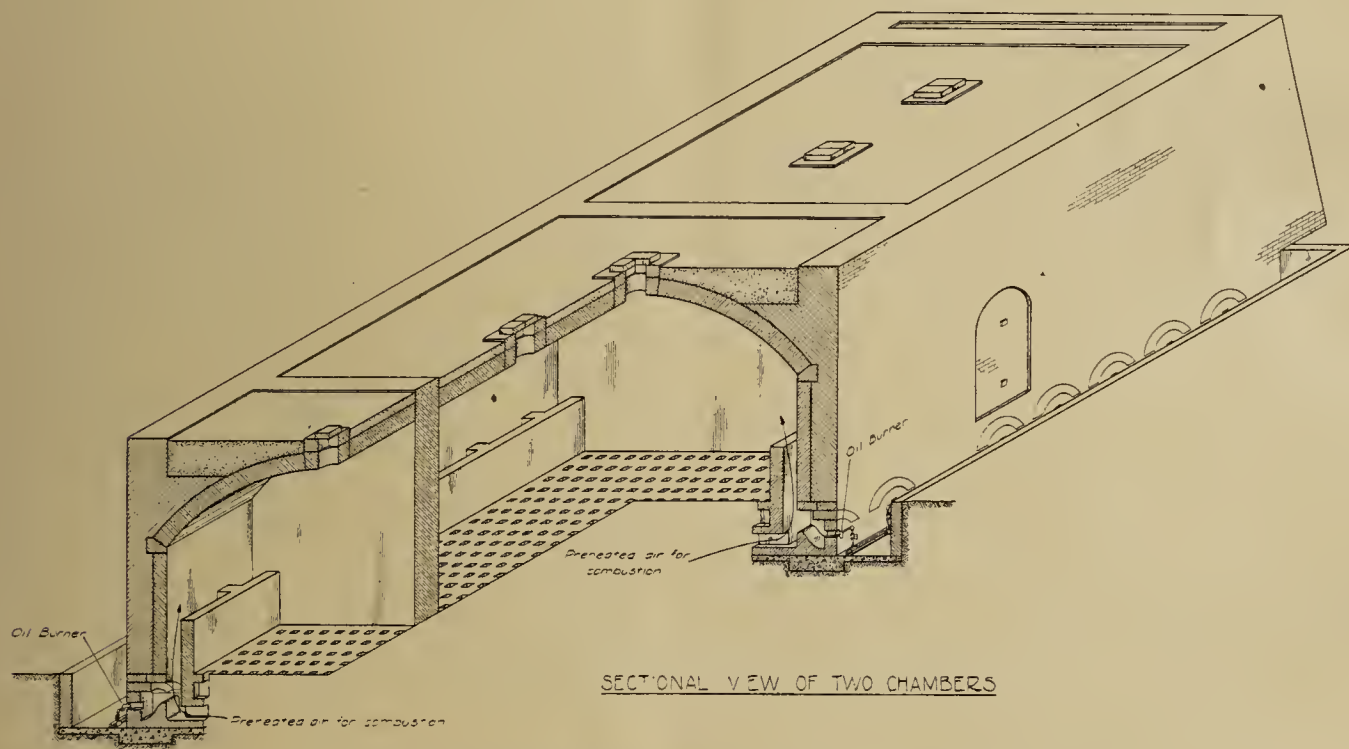
The tandem compartment kiln permits of firing in special furnaces in the outside wall, on both sides of the compartments, the combustion bags protecting the ware in the usual



RICHARDSON COMPARTMENT KILN

FOR OIL FIRING

Fig. 9.



SECTIONAL VIEW OF TWO CHAMBERS

RICHARDSON COMPARTMENT TUNNEL KILN

WITH OIL FURNACES

Fig. 10.

for heavy clay products are the parallel compartment kiln, two-side fired, illustrated in Fig. 9, and the tunnel or tandem compartment kiln shown in Fig. 10.

The parallel compartment kiln has the advantage that all the fires, on either side of the kiln, can be seen at same time through the peep holes in the corners of the compartments, but the only practical way of applying the oil firing is through the crowns into the combustion bags on the sides, and this requires careful watchfulness and regulation to pre-

maner. In this kiln the oil burners are preferably at or below the level of kiln floor and thus it is easier to get hard-burnt ware uniformly over the bottom of the kiln. A disadvantage of this kiln is that the application of only one fire can be seen at a time, which makes uniform regulation of all the fires more difficult.

Summary.

1. Fuel oil is an excellent fuel for clay products and is entirely practical where and when the price is low enough

to make the cost of burning per ton of clay product not much higher than with producer gas or direct coal firing.

2. Careful investigation should be made as to the probable stability of price, and also as to the best equipment for the special conditions and purposes.

3. Where new kilns are to be built they should be of the continuous regenerative type.

Written for The Clay-Worker.

GEORGIA BRICK NEWS.



HERE HAS BEEN a marked movement noted by the brick and clay products manufacturing industries of the southeastern field during the past four or five weeks, both as compared with business during the late summer and as compared with the same period a year ago.

The increase in production at the larger southern plants, as compared with production during the same time last year, has experienced a notable increase the past few weeks, and is now approximately 35 per cent greater than in 1922. Compared with production the latter part of the summer, plants are now manufacturing on a basis about 8 to 9 per cent greater, a rather unusual fact considering the lateness of the season for building.

In the volume of business booked, however, the increase has been even more notable as compared with last year, larger companies reporting a betterment of about 75 per cent or more. As compared with the latter part of the summer, increased orders are about 12 to 13 per cent larger, with the outlook very good for continued steady demand for some months to come.

Building continues very active over the whole Southeast, in spite of the lateness of the year, which fact, of course, is accounting for the increased brick orders and increased production at the southeastern plants. Many of the leading southern cities will this year establish new construction records, much of this building being in brick structures, such as hotels and apartment houses, schools, churches, office buildings and the like.

With the cotton crop insuring the largest returns financially in the history of the industry, another greater building year in 1924 is looked for, and continued steady production for the brick and clay products industries of the southern district.

As would be expected, the brick and clay products industries of the southern field experienced a decline during October in the amount of new construction carried out by the existing industries, or in new plants, etc., by newly formed companies, only about half a dozen such projects having been announced in the southern states during October, according to information received in Atlanta from a thoroughly reliable source. This was considerably less than the monthly average for the first nine months of the year—January to September inclusive—which was about twice this number. The total of such projects for the first ten months of the present year is about 110, entailing a gross investment of many hundreds of thousands of dollars in new brick and clay products manufacturing plants, and additional construction by various companies. It is almost certain that 1923 has proven the greatest year in the history of the industry in development of this nature.

From a statistical report compiled recently by the office of Professor S. W. McCallie, State Geologist for Georgia, it is shown that the state produced last year more than one-half the clay in the United States, though little of it was manu-

factured into finished products within the state, as this branch of the industry has as yet experienced little development. What is needed to insure development of the manufacturing end of the industry in Georgia, Professor McCallie states, is an increased appropriation, the annual amount now being only \$15,500.

Establishment of the new School of Ceramic Engineering at the Georgia School of Technology in Atlanta, next year, however, is expected to ultimately bring about the widespread development of the clay products manufacturing industries in Georgia.

Professor McCallie further states that recent experiments at the Bureau of Mines station, at Columbus, O., have shown Georgia produced clays particularly adaptable for ceramic manufacturing, for use in the metal industry and for the making of floor tiling. Experiments now are in progress to determine whether or not these Georgia clays can also be used in the making of fine porcelains.

A meeting of considerable importance to the clay producing industries of the South was held the early part of December at Chattanooga, Tenn., by the Southern Tariff Association, an organization including in its membership many of the leading industries of the South. An effort to form a compact organization of all southern industries will be made by this association, in order that it may demand an adequate tariff protection for southern produced commodities. The association is desirous of bringing about a more stabilized tariff policy than now is in vogue. This plan is of particular importance to the mineral producing industries of the South, as some minerals now are on the free list and successful competition with foreign producers is now possible because of that fact. Adequate protection of southern minerals is to be sought during the coming year, according to the program outlined by the association membership at the recent meeting in Chattanooga.

The South Atlantic States Association has appointed B. C. Getsinger, chief of the Bureau of Foreign and Domestic Commerce, southeastern division, as executive secretary, and he will hold the new post in connection with his work for the commerce bureau. The association is to carry on during the coming year a comprehensive campaign in an effort to secure equalized freight rates that will enable southern ports to compete successfully for northern export business with the ports of the North Atlantic coast, not now possible because the freight rates are discriminatory against the South.

The southeastern bureau has aided many manufacturers and producers of the South, the past two years, in developing a foreign trade, and any readers of The Clay-Worker interested in further expansion of their export demand, or the development of a foreign trade, are asked by Mr. Getsinger to get in touch with his office—Southeastern Division, Bureau of Foreign and Domestic Commerce, Federal Bldg., Atlanta, Georgia.

P. O. D.

A MODERN PHILOSOPHER ON ADVERTISING.

All live men are advertisers, and the only man who should not advertise is the man who has nothing to offer to the world in the way of human service, and such a man is a dead one, whether he knows it or not. Advertising is a legitimate and ethical proposition. Life is too short for you to hide yourself away, mantled in your modesty, and let the world hunt you out. Even the dead are advertisers, for on visiting a beautiful cemetery the other day, I noticed that on nearly every marble slab was given a list of the virtues, talents and beautiful qualities which the dead man was supposed to have carried in stock. This is what you call non-productive advertising, or advertising from an emotional standpoint.—Elbert Hubbard.

SIGHTS SIGHTED

By an Itinerant Clayworker on a Trip Through Interesting Clay Products Plants in Illinois and Missouri

WE DRIFTED down to McLeansboro, Ill., not long since, where the McLeansboro Shale Products Company are erecting a new plant, and it is going to be a dandy little one-man plant for making shale hollow tile and shale building brick. They have a beautiful deposit of shale, and are installing a 9-inch Eagle Dry Pan, a Freese Combination Stiff Mud Machine, a large sized Piano Wire Screen, and an International Clay Machinery Company Radiated Heat Dryer.

Mr. VerBeck, the manager, took us over the layout. He has installed Moroney's Oil Burners, and figures that even in a coal district it is going to pay him to "Do it with oil"—as Moroney says. The plant is located on the L. & N. R. R., and their big trade is to be south of the Ohio river for load-bearing tile and face brick. Their shale burns a beautiful red color, and VerBeck says tests have shown that oil improves the color.

From McLeansboro we drifted over to the great clay-working town of St. Louis. The first yard we visited was the Progress Brick Company's yard—Mr. Jacob Stocke, Jr., "The Big Boss." They are running full, making high-grade front brick by the dry press system, and their rough texture face brick.

Rough Texture Brick That Look Like Velvet.

It is wonderful the quality of brick that they are turning out on the dry press machine. The only brick that we saw that beat it was made on the same device at John Sibley's yard at Birmingham. Mr. Sibley has the advantage of having buff and red burning clays, and a mixture from these clays, to the writer's opinion, makes a much better rough texture brick than the straight red burning clay. The brick that the Progress people were making looked like a piece of velvet, and we saw some of the buildings erected from them, and they are beauties.

Then we called on our old friend, Walter Mitchell, who is managing the Superior Press Brick Company's yard. They make both stiff mud and dry press brick. The day that we were there the stiff mud plant was shut down, and they were running full on dry press, making a beautiful face brick. We have seen in our time some wonderful burns in up-draft kilns, but doubt if we have ever seen better burns than Walter Mitchell is making in up-draft clamp kilns with dry press brick.

From the red brick yards, we blew over to the Missouri Fire Brick Company's yard and "Yes, yes'd" Mr. Fred Schwetye, the superintendent. A visit to one of the large fire brick yards in St. Louis is an education for a brick-maker. Intricate shapes and the care that they have to use in the manufacture of refractories is a revelation.

We saw Mr. Schwetye loading a car that contained one hundred and forty-nine different shapes to be shipped to the New England States. The Missouri Fire Brick Company makes both hand molded ware and dry press fire brick. They use the Berg Press, and have had one in for twenty years making 9-inch brick.

From the Missouri plant we went over to the Highlands Fire Clay Company, and saw them preparing clay for the glass industry. This is the last word in a clay washing plant, and it is surprising to see the foreign matter that they wash out of what appears to the eye to be a real high-grade, absolutely pure clay.

From St. Louis we went to Mexico, Missouri, and visited

the two plants of the A. P. Green Fire Brick Company. Mr. A. P. Green, Mr. J. B. Arthur and Mr. Leighow, the superintendent, entertained us on the plant. On the East Plant, when we went over to the clay bank, we saw a miniature Panama Canal with five steam shovels working stripping the overburden on the famous Green "Standard," "Crown" and "Empire" clays.

We have been on fire brick plants all over the country, and we think that Green's new plant, which they call the Josephine Plant, is the last word on fire brick plant construction. The Green Company was building some new steel shell kilns, and for solid, substantial construction they are the best we have ever seen.

It is well worth any clayworker's time to visit the two plants at Mexico of the Green Company, and if they treat all their visitors like they did the writer, it is bound to be as "bread cast upon the waters." They are certainly making a fine product, and treat their guests royally.

"BIG SIX."

RUTGERS COLLEGE CERAMIC CLUB ACTIVE.

The first meeting of the Rutgers College Ceramic Club (student branch of the American Ceramic Society) was held in the new Ceramics building on September 27, 1923. The following officers were elected to serve for the year 1923-24: President, G. C. Betz; vice-president, L. R. Squier; secretary, J. A. Plusch; treasurer, R. T. Rouse. Mr. R. H. Minton and Prof. G. H. Brown were appointed councilors.

The second meeting of the club was held at the Ceramics building on October 18. Mr. George Simcoe, of Edgar Bros. Company, Metuchen, N. J., presented an interesting paper on the "Raw Materials in the Ceramics Industry."

About thirty students are enrolled in the Ceramics course, and the prospects are very bright for a large enrollment in 1924. Two new instructors, J. A. Martz (O. S. U.) and W. L. Shearer (Lehigh), have been added to the staff.

The eastern section of the Refractories Manufacturers' Association held a meeting at the new Ceramics building on October 25. The members were afforded an opportunity to observe the work of the students in the department.

BRICK MACHINERY WANTED FOR SOUTH AMERICA.

The Department of Commerce is advised by its representatives located in Brazil, South America, that there is developing in that country a most promising market for American brickmaking machinery and equipment for these plants. The reports to the department state that, owing to extensive building operations in Sao Paulo and other states of Brazil, there has been an unprecedented demand for bricks, and that although there are many brick kilns and plants in operation, most of them use primitive methods and machinery. Because of the abundance of clay soil in the vicinity of Sao Paulo and throughout that section of the country and the demand for bricks rapidly increasing, good possibilities are offered for the development of the brickmaking industry and the sale of modern brickmaking machinery.

The American consul stationed at Sao Paulo requests of United States brick machinery manufacturers catalogs showing plant installations having a capacity for manufacturing from 5,000 to 30,000 bricks a day. Our machinery manufacturing firms who desire to get in touch with this field are invited by the department to send in catalogs, marking them plainly: "For the Industrial Machinery Division, Bureau of Foreign and Domestic Commerce, Washington, D. C., for Transmission to Consul A. T. Haeberle, Sao Paulo, Brazil."

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

TRADE QUIZ BOX.

QUESTION: We have been having trouble with our brick cracking, and we will be very thankful for any information you can give us which will help us to make a better product. After our brick are manufactured, dried and burned, we find our hard and salmon brick have cracks in the sides. This does not develop in the drying, but it does sometimes, and in fact often develops after they are burned.

We make 25,000 brick per day from a beautiful strata of clay, and these are then put on the hacking boards, trucked to the drying sheds, dried by air and left in the dry sheds for two weeks. They are then set in our kilns, taking two weeks longer to dry and are then burned. We burn first by wood, slowly drying them out for about two days, following this with Pocahontas coal, burning about one week all told with the wood and coal. We then let these cool off in the kilns with furnace doors closed tightly for several days, gradually opening the furnace doors very little until cooled. We have even tried cooling these brick without opening the furnace doors for nearly a week.

Answer: The company has not given us any information to enable us to determine the cause nor the source of the cracked bricks. Many operators getting faulty bricks from the kilns assume that the trouble is in the burning or cooling but in the majority of instances the trouble is in the machine work or the drying.

They do not say whether they are making soft mud or stiff mud and we assume that the product is stiff mud, but we are still in doubt whether the product is side or end cut.

Human ills have symptoms often remote from the seat of the illness, and cracks in clay wares are symptoms, often characteristically so, of faults in some stage of the process of manufacture and quite frequently not the stage in which the "symptom" appears.

The faults in the structure of the ware may be more than one and the modified "symptoms" are not decipherable.

Side cut bricks often have a small crack, usually slightly "S" shaped in the center of the flat side of the brick and this crack often extends through the brick and many bats come from a kiln with such cracks. This crack is a structural fault and goes back to the machine. The circular movement of the auger moves the clay mass faster on the outer rim of the auger blades and the movement is slower and slower as we approach the center. The central point of the auger gives no flow to the clay and this is a line of "no flow" through the center of the column of clay. If we could examine the structure of the bar in the center we would

find the clay drawn out in festoons, attenuated like drawn-out taffy. In this line the structure is weak and under shrinkage strains the "S" shaped crack develops. Its shape is plainly trying to show us the two-bladed auger and its circular sweep. It must be overcome, in the die construction, by extension ring, drags, perhaps in extreme cases by bridges, to crowd the outer mass of the clay to the center of the bar, also by relatively long tapered dies. This is a problem for the machine maker.

In end-cut bricks we often get a ragged straight crack the full length of the brick on both flat sides. This is also a machine fault which may appear in the stream of clay on the cutting table, or later in the drying, or if the drying shrinkage is slight, the crack may not appear until the burning shrinkage opens it to view, but it is there just the same and was put there by the machine.

Some types of end-cut machines use a long tapering die and in the throat of the die is a hump, or spreader, to crowd out the clay to fill the corners of the die. In principle the spreader may be compared to the point of the brick-layer's trowel as he uses it in spreading the mortar. The tendency of the spreader is to separate the column into two streams and accomplishes the spreading to the extent of a line of weakness through the center of the bar, which opens under drying or burning shrinkages.

The correction, or partial correction, is obvious.

We often get a similar crack in consequence of lamination in an end-cut brick. The lamination is a central core enclosed in a rectangular envelope. The envelope is thinnest on the flat sides of the bricks and under shrinkage strains the crack develops along this line of weakness.

Frequently we get the straight crack the length of the brick on the sides, and from the edges are straight cracks vertical to the long side cracks. If the brick were to be cut along the lines of these cracks we get a number of nearly rectangular pieces from the cracked brick. Here we have lamination coupled with naturally weak drying qualities.

Often the ware is crackled—cracks at all angles running into each other, but roughly dividing the surface of the brick into hexagonal sections resembling a road map in a hill country. These are characteristic drying cracks and if we wish to overcome them we must resort to some method of humidity drying.

The hexagonal cracking usually occurs in relatively fat, sticky, high shrinking clays, and the full diagonal figure is only seen in large blocks. In small blocks, such as bricks, we may get one or two sides of the hexagon, but not the full figure. The cracked lines are, however, angular in their direction.

A burning crack is usually a straight crack running into the brick from the edges and there is seldom more than two or three such cracks, often only one, in each brick.

Cooling cracks are usually fine hair cracks often not discernible and the presence of the crack can only be determined by tapping the brick to get a clear, or "cracked," sound. Where cooling cracks are slight in depth they can not be seen nor determined by the sound but after the ware is put on the yard and exposed for some time to the weather, dirt will wash into the cracks and make them visible.

Drain tile and other hollow wares often crack in straight line like a "bridge" crack in a drain tile where the tile are with the core bridges and are known as "bridge" cracks.

A crack which we never could understand is a straight line the length of the tile and these cracks are in line stuffed in the setting. The outer tile is the one that cracks. Drain tiles from some clays can not be stuffed in the setting

because of this cracking, but others give no trouble though the kilns are stuffed to the limit.

Curved cracks in the division walls of hollow blocks are due to unequal flow of the clay through the die.

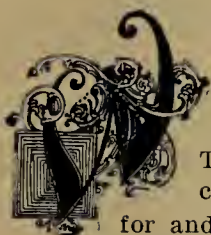
Retardation of any part of the flow of the tile through the die results in an attenuated structure of the wall retarded and this weak wall will crack under shrinkage strains.

Now, Mr. Editor, we would suggest that when any of your correspondents ask you for remedies to cure the ills of their ware, you have them send you the symptoms of the illness—sketches, photographs, typical samples—and if the symptoms are not clear to you, at least you can, like a doctor of human ills, make some kind of a guess, and treat accordingly, and may get a chance to change the treatment if the first remedy does not effect a cure.

CAREY P. ELLIS.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



PACIFIC INDIVIDUAL projects are having their ups and downs, the clear fact remains that the whole ceramic development of the Pacific slope is moving rapidly forward. The substantial prospects of continuously increasing population have spurred the search for and surveys of local deposits, and encouraged the investment of larger capital in the work of development. No longer is the "brick yard" a more or less accidental and crudely worked development of some local deposit of doubtful value. Increasing transportation facilities, among which the motor truck and splendid roads are an important element, assure wider and cheaper distribution, and contribute an added element of safety for greater financial investment. And the growing cities and increasing wealth give ample assurance of future markets.

In the southland, the marvelous growth of Los Angeles and neighboring cities, together with the fortunate discovery of excellent deposits, and the enterprise of leaders of experience in the industry, have wrought extraordinary development. This is not more surprising, however, than the development in the northwest, where, surrounded by immense forests, clay products have become increasingly popular. Perhaps the familiarity of those people with the resistless and dangerous forest fires, and a few experiences like the burning of Astoria, have had something to do with the increasing use of clay products in this region of abundant timber. In central and northern California, though somewhat more tardy in its development, the industry can be said to be fairly launched on a period of new development; and surveys indicate that the resources have only been touched, whether as to quantity or to quality.

U. S. Refractories Co. Reorganized.

One difficulty with a number of the new enterprises in central California has been in being obliged to start with smaller capital than the circumstances of the enterprise required. This makes the investment venturesome. This has been the experience of the U. S. Refractories Co., of San Luis Obispo. So for the purpose of providing larger capitalization they have reorganized as the Incello Co. The State Commissioner of Corporations has issued permit to the new company authorizing capitalization to the amount of \$1,000,000. The officers of the new company are: George H. Emery, president and general manager, who is from the Pacific Clay Products Co.; A. T. Wintergill, vice-president, who is a practical clay-worker, and M. D. Baldwin, secretary, who has been active

in reorganizing the company. Under the reorganization, old stockholders are given equal holding in the new concern with a 25 per cent stock bonus.

The plant will be immediately enlarged and new machinery installed for the making of hollow tile, fireproofing, roofing tile, face brick, etc., together with a 300-ft. tunnel kiln. Convenient location on the main line of the Southern Pacific and proximity to Port San Luis have largely influenced in expanding the plant, which has been engaged in the making of insulating brick, natural insulating powder, filtering powder and calcined insulating powder.

Says Mr. Emery, the president: "The experience of the Refractories Company is no different from all new enterprises in that it found that it was not capitalized for a sufficient amount of money with which to organize a new industry, build adequate plant and carry on its business."

San Luis Obispo Brick Company Expanding.

Another clay product of San Luis Obispo that is expanding is the San Luis Obispo Brick Company. J. F. Faulstich, manager, has been to Los Angeles getting the necessary machinery to add 25 per cent to the capacity of the plant. They started over three years ago, having taken over an abandoned plant. Since then they have turned out over 3,000,000 bricks yearly, mostly shipped out. But the local demand has been gaining on the production until nearly half the output is locally used.

New Magnesite Plant.

Chinese, Cal., was one of the old mining camps of the exciting days of gold. It is there that John P. Maxwell, of the Maxwell Hardware Company, Oakland, is arranging to operate a magnesite plant. To burn the material a large brick kiln is being completed.

Grinding Plant at Rock Hill, Nev.

The Silica Superior Syndicate is installing a No. 3 Gruender pulverizing mill of a capacity of 8 to 10 tons daily, four miles from Rock Hill on the Tonopah & Goldfield railroad. This mill produces the so-called air-float product, 250 to 300 mesh fine. For power a 60 h. p. Lamb marine engine is being transported to the plant. The company controls 4,460 acres of diatomaceous earth. Its officers are: C. M. Fagenbush, president; E. M. Daniels, secretary; Lee F. Hand, treasurer, and A. C. LaBud, superintendent. The main office of the company will be at Goldfield, Nev.

Huntington Park (Cal.) Plant Near Completion.

The California Clay Products Co. has a large force working overtime on its new plant at Huntington Park, Cal., in order that it may be in readiness by the first of January. This first unit of the plant will be about three times the capacity of the present plant, and when entirely completed it will be one of the largest and best equipped plants of its kind in California. The company has an authorized capitalization of \$1,000,000, and is offering \$200,000 stock now in connection with the improvements in progress. SUNSET.

LOOKING AFTER WESTERN TRADE.

Stratton-Cahoon Co., 809 McIntyre Building, Salt Lake City, Utah, will look after the sales of the Weller Manufacturing Co. in the northwest territory. The Weller Mfg. Co. is well and favorably known, having supplied most of the sugar beet handling and storing machinery in the sugar districts. They have also installed the grain handling machinery in a great number of the large flour mills and terminal elevators. With their new connection they will no doubt be contender for a large part of the business in the northwest territory.

ANNUAL MEETING AMERICAN FACE BRICK ASSOCIATION

A Fine Attendance and a Busy Week for Face Brick Manufacturers and Dealers at French Lick, Ind.

CO-OPERATIVE EFFORT seemed to be the dominating characteristic of the gathering of face brick manufacturers and dealers at French Lick Springs December 4, 5 and 6. As will be seen by the accompanying list of those in attendance, the leading men in the face brick industry were present and the spirit of good fellowship marked every feature of the meeting.

The first session was called to order on schedule time, Tuesday the 4th, and was devoted to routine business—the reading of the minutes of the previous convention and addresses and reports by the president, secretary and the chairmen of the various committees. Of course Dr. Mars was one of the star performers. His report of the Service Department, which covers the publicity work of the association, was both amusing and heartening. The latter term is quite apropos, for publicity is the heart of the organization, forcing the red blood of enthusiasm through all the arteries of commerce in which face brick enter.

President Adams' address was particularly forceful, and we are pleased to print it in full.

Annual Address by President J. M. Adams.

Ladies and Gentlemen:

One of the afflictions that is visited upon you from year to year and from which there seems to be no escape is the annual address of the president of the association. I promise you, however, not to prolong the agony. * * *

I am supposed to outline the work done by the association during the past year; but our alert and indefatigable secretary, Mr. Hollowell, has kept you so fully informed as to the activities of the association that for me to go into a detailed report would be a vain repetition. His report as secretary and treasurer is to follow soon. * * *

A Book on Italian Brick Work.

Dr. Mars, of the Department of Service, has had a strenuous year. He not only prepared our great advertising campaign of 1923, but found time to go to Italy for the purpose of securing at first hand material for a book on Italian brick work. In this task he was very successful. With this wealth of material and with Dr. Mars' pre-eminent literary ability, we are assured a work that will be hailed with delight by the architects and face brick manufacturers of the United States and Canada. * * *

The average member has little conception of the amount of work necessary to keep all the machinery of an organization like ours properly working.

More Bricklayers Needed.

The shortage of bricklayers has been a very serious handicap to our industry during the past year, resulting in the highest wages ever paid in this country for bricklaying. Competition among the mason contractors has resulted in premium of from \$1 to \$3 per day over the scale fixed by the Bricklayers' Union.

According to the figures published by the National Association of Building Trades Employers, there were 169,402 bricklayers in the United States in 1910, or 1 to 455 of the population. In 1920 this ratio had dropped to 1 to 805 of the country's population, showing a shortage of 63,362. This shortage increased during 1921 and 1922 rather than decreased.

Some of the more thoughtful of the labor leaders are beginning to realize that times have changed and that the ambitious young man will not serve an apprenticeship of from three to four years to learn a trade that a bright young man ought to master in two years. The apprenticeship for bricklayers in Ohio is four years. * * *

The shortage of labor in the crafts is going to continue until the craze for white-collar jobs subsides. The average

craftsman does not seem to want his son to follow in his footsteps but wants him to be a lawyer, doctor, engineer, or to enter some other lily-hand occupation.

Co-operation the Watchword.

Co-operation is the watchword of the hour. I am fully persuaded that for any firm or any industry to reach its greatest success and broadest development there must be the fullest and most unselfish co-operation of all its members. We are far from this stage of development in our industry.

Opposing forces neutralize each other and the result is often naught, but united forces mean strength, power, accomplishment.

Full co-operation means faith in the integrity of our fellow members even if we do not always agree with them.

Occasionally we hear it said that our association is run by a clique or cliques. Here's the "American Greeter's" idea of "The Clique":

"What is The Clique? 'Tis a body of men
Who attend every meeting—not just now and then—
Who don't miss a meeting unless they are sick—
These are the men that the grouch calls 'The Clique'—
Who don't make a farce of that magic word 'Work,'
Who believe in the motto, 'Not a job will I shirk,'
Who never resort to an underhand trick—
These are the men that some call 'The Clique.'
The men who are seldom behind in their dues,
And who from the meeting do not carry news;
Who attend to their duties and don't seek a kick—
Those are the men that the crank calls 'The Clique.'
We all should be proud of members like these;
They call them 'The Clique' or whatever they please,
But there are some people who always find fault,
And the most of this kind are not worth their salt.
They like to start trouble but seldom will stick,
And leave all the work to be done by 'The Clique.'"

Let us away with any such notion of cliques. Get busy in the work of the association and you will be a member of the only clique in existence.

Before the war there were in the United States about 800 trade associations. Today there are over 1,800.

The Function of the Trade Association.

Secretary Hoover of the Federal Department of Commerce, speaking of trade associations, says:

"The trade association as a faculty for the promotion and self-regulation of industry and commerce has become, by reason of its scope and activity, an important American business institution. Business has always entailed the strife of competition. It always will and it always should. However, there are rules and principles of fair play that must be regarded in trade relations, and in the development, establishment and maintenance of these rules the trade association has come to be a potent factor.

"Take commercial arbitration, standard contract forms and trading rules; each is a direct step toward saner business practice.

"The stamping out of unfair competition and misrepresentation and the adoption of fair practice principles, codes of ethics, have been real accomplishments of scores of trade associations in the direction of better business."

Unfair competition is an unmitigated evil, for whatever is deleterious to the individual manufacturer is deleterious to the industry as a whole and whatever is harmful to an industry is harmful to the whole industrial and social fabric.

Be not deceived. When we injure a competitor by unfair means, we injure ourselves, and when we aid a competitor to turn out a better product, we help our industry and consequently help ourselves. * * *

There is yet much for our association to do in the way of educating our membership in methods of doing business.

It may be surprising to know that there are some brick manufacturers who fail to answer letters, do not acknowledge the receipt of orders even, and fail to insist upon having correct data on orders received.

More Attention to Details Needed.

Some dealers are careless about giving full information. How often it occurs that orders are delayed on account of special brick not having been ordered. These special brick were shown on the blueprints but neither the contractor nor the dealer took the trouble to look over the blueprints. This frequently results in long delays and loss both to the contractor and to the owner and trouble to the manufacturer.

Just recently a job came under our notice where an order of brick to be laid in Flemish Bond with dark headers was sent to the manufacturer. The order was simply for a certain shade of brick and nothing said about dark headers. Two or three cars of brick were shipped on the job and of course the dark headers were not included. The result was a vexatious delay. The manufacturer was censured and the owner discouraged in the use of face brick. * * *

Some dealers are afraid to advertise the factory name of a brick for fear they might lose the line. No good dealer needs to fear the loss of a line if he deals fairly with the manufacturer. I know cities where millions of face brick are sold and the names of the manufacturers of these brick are absolutely unknown.

Be proud of your product and see to it that the name is not being submerged by the distributor. On the other hand, a manufacturer should protect the dealer in his assigned territory.

We are in the midst of a great development in the face brick industry. As nearly as I can estimate the capacity of the face brick plants of the country exceeds the normal yearly consumption by at least 33 1/3 per cent. Many new plants are being built and paving and common brick plants changing to face brick. Now, what are we going to do with this increased production? Are we to shut down our plants one-third of the time, or allow many manufacturers to be put out of business with their less fortunately located plants, or are we to devise ways and means of increasing the consumption of face brick? It would seem to me that there should be no argument on these points.

From 1909 to 1919 there was a decrease of two-thirds of 1 per cent in the sale of face brick, notwithstanding the increase in wealth and population. The industry up until 1919 had done nothing in the way of publicity, while the lumber, cement and stucco manufacturers had expended hundreds of thousands of dollars, if not millions, in exploiting their products. In 1919 we began our Publicity Campaign. In 1922 the increase in the use of face brick over 1919, or an average of ten years before, was 78 per cent. After making allowance for the war period of 1918, when building largely ceased, there is still a wide margin left, and I attribute this great increase in the use of face brick to the publicity and educational campaign of this Association. We should not only continue our advertising campaign, but we should increase it.

Increased Sales Through Proper Distribution.

Furthermore, I believe that much can be done to increase the sale of our brick by looking toward proper means of distribution. This is a mooted question. Some manufacturers feel that a large territory should be placed in the hands of one dealer. Others believe that every building material dealer in the United States should sell face brick. Personally I am inclined to the latter method. However, every manufacturer is perfectly free to adopt whatever method of distribution he chooses.

There are 4,000 building material dealers in the United States rated at upward of \$20,000 each, and many thousands rated at less than this amount. Of the 4,000, there are now many brick merchants who carry a full line of brick in stock; the rest are merely brick peddlers who sell from sample, and the customer has to wait until the brick are shipped in.

There are many towns of considerable size where you can not buy the brick for a mantel out of stock. How small must be a town where you can not buy lumber and cement for immediate delivery!

One of the finest examples of perfect distribution is the Standard Oil Company. You can buy Standard Oil products everywhere. There is scarcely a village so small where Standard Oil products can not be bought. Not only are they selling their product in the minutest way in the United States,

but they are extending their sales to every nook and corner of the world.

In some other lines of burnt clay the manufacturers are keeping men on the road all the time, not selling but educating the trade in the use of their wares and the profits to be derived from their sale. This Association could well afford to do the same thing.

The face brick industry will not have reached its full development until good face brick can be bought for immediate delivery in every city and hamlet in the country. * * *

Some High Points in A. F. B. A. Accomplishments.

The inquiry is sometimes made, "What has the American Face Brick Association done?"

It has raised the standard of ethics both in our own industry and among the face brick dealers throughout the country. Unfair competition has been greatly reduced. Our competitors are no longer looked upon as thieves and robbers.

It has established a uniform size for face brick and induced the Division of Simplified Practice of the Federal Department of Commerce to adopt the same.

It has established correct cost accounting in the industry, one of the great achievements of the Association.

It has supported expert research work along the line of brick burning and conservation of fuel.

It performed a Herculean task in securing lower freight rates and in setting our product in a correct light before the Interstate Commerce Commission.

It is at work vigorously on the problem of increasing the supply of bricklayers.

In the last three and a half years it has expended approximately \$900,000 in educating the public as to the superiority of face brick as a building material.

It has created a high class literature for our industry. Our publications are now to be found in hundreds of libraries, and are used as auxiliary text books in many high schools, colleges and universities; and, in addition to this, eight or ten films are in constant use throughout the United States illustrating the manufacture of face brick.

It has put the face brick manufacturing business high on the roll of important industries. Our sons need no longer hesitate to follow in our footsteps.

It has through prompt compilation and release developed practically the only authentic source of information regarding the trend of conditions within the industry.

It has established an avenue of communication between our industry and the Federal government.

It has manned the watch tower of progress and guided the industry to greater heights of usefulness and public esteem than ever before attained. In fact, it has done everything that has been done in the last twelve years to make our industry better and broader, and has proved to the world our right to exist, for neither the individual nor an industry has any excuse for existence that does not add something to the sum total of human happiness. And who has brought all this about? Approximately a hundred unselfish, far-visioned manufacturers who make up the American Face Brick Association.

We are at the threshold of another year. Opportunity beckons. Let us remember that we never rise above our aspirations. Let us enter upon the duties of the new year with a renewed courage and an enlarged vision, remembering always that

"We live in deed, not years; in thought, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best."
(Applause.)

General Report by Secretary R. D. T. Hollowell.

Gentlemen of the Convention:

Nineteen twenty-three has been another remarkable year. Indications are that 1923 will outstrip 1922, the previous great year in the history of our business. Speaking generally, operating conditions have been excellent; there has been sufficient labor and an ample supply of fuel; in the face of the greatest volume of freight traffic the country has ever seen, the supply of cars to our industry has been practically 100 per cent; freight movement has been reasonably prompt; to top all of this, the demand for face brick in 1923 has exceeded that of any previous year. We have now had nearly two years of extraordinarily good conditions. Our industry is becoming firmly established. Our people are today making

the finest ware our ancient industry has ever produced, and with a growing appreciation by the consuming public, those manufacturers who are equipped, physically and mentally, to keep pace with the fast moving procession, can look forward to the future with much confidence.

An important part of the Association service to members is performed in the conduct of division meetings. There is tangible evidence of a growing appreciation of these conferences. The average attendance at division meetings in 1923 showed an increase of 20 per cent over 1922. Average attendance increased in the Indiana-Illinois division by 39 per cent; Ohio Red division, 44 per cent; Buff, Gray and Flashed division, 18 per cent, and Southern division, 38 per cent. These increases are attributed to policies adopted by these divisions in holding meetings at points where plants could be visited, and by featuring presentations of excellent papers or addresses on matters of timely interest. The carefully prepared papers by our own members seem to have created unusual interest. In four divisions interested in plant inspection, some forty-five plants were visited during the last seven months. An idea as to the exceptional merit of the papers referred to can be obtained by mentioning a few of the subjects: "The Sorting and Shading of Face Brick," "The Development of Color in Face Brick," "Black Core in Clay Ware," "The Marketing of Face Brick," "Producer Gas Firing," "Maintaining Methods of Production," etc. Copies of all papers have been distributed to all members. Particular credit should be acknowledged for the energetic and unselfish efforts of our division chairmen and the careful attention to all detail by our division secretary.

Interesting Meeting at New Orleans.

An outstanding example of successful division effort was the recent dinner to New Orleans architects tendered by the Southern division. The sixty odd architects present gained a better impression and understanding of face brick and its wide possibilities. The occasion was also marked by an elaborate special face brick edition of a New Orleans daily newspaper, copies of which were forwarded to every architect in the southern states.

For several years there has been a growing realization that the potential market for face brick was limited by the number of mechanics to lay the material. There have been many discussions of this vital subject by our board of directors. A committee appointed at the board meeting held at West Badeu, December 6, 1922, made extensive investigations into the subject but owing to lack of funds it could take no definite action. At a board meeting held on July 17, 1923, it was unanimously voted that the president appoint a committee with authority to act on this subject, and that an appropriation be placed at the committee's disposal. The chairman of this committee will report to you at this session.

About six years ago our membership adopted standards for the approximate sizes for rough and smooth face brick. Since that time the bulk of the production has conformed. * * *

I do not believe that any one now questions the success of our promotion campaign. The paint and varnish people have carried on a highly successful promotion campaign during the last five years under the slogan, "Save the Surface and You Save All." Taking 1921 as their base, they showed an increase of 7 per cent in 1922, and the first six months in 1923 showed a 32 per cent increase over the same period in 1922. They originally set the year 1926 as the year in which they would double the consumption of paint and varnish, and from the above figures they are now aiming to make their objective in 1924—two years earlier than the time originally allowed. Using the same base year, 1921, face brick showed an increase of 61 per cent in 1922, and with a further substantial increase for 1923 we should also double our consumption before 1926.

Large Increase in Production.

A great deal of new production has come into our industry within the last four years. Old face brick plants have been enlarged, new plants have been built, and many clayworkers previously manufacturing some other clay ware have turned a part or all of their production on to face brick. It is up to this Association to create demand sufficient to take care of all the production. This can and must be accomplished. If our service department had at its disposal an additional sum of from \$75,000 to \$100,000 per annum for display advertising in great popular magazines, in addition to and on top of the media which are now being used, we would, as Mr. Parlin expressed it last year, "GET FACE BRICK CONSCIOUSNESS" so deeply instilled into the minds of every one that, when thinking in terms of construction, the mind of the

man on the street would turn subconsciously to brick.

Such an additional fund must be raised by gaining the support of additional production. While this Association has actually spent approximately \$900,000 since 1919 in striving to sell the entire country's face brick production, there is at least 40 per cent of the present face brick production which is contributing neither ideas nor financial support to this effort. It should be the duty of every member of this Association to bring in at least one new member in the year 1924. If that can be done, there is no question in my mind but that the huge demand for face brick in 1922 could be doubled by the year 1927. * * * Applause.

Second Session.

Some of the big features of the convention were on the program for Thursday morning, December 6. President Adams called the session to order, and before starting off with the regular program, Secretary Hollowell was asked to read a copy of resolutions which had been adopted at the previous day's meeting of the Face Brick Dealers' Association which were calculated to help develop close co-operation between the two organizations.

The first number on the regular program was a talk by R. M. Gillespie, who is a member of the Executive Board of the Masons Contractors' Association of the United States and Canada, and is identified more specifically with the St. Louis organization.

The Problem of Bricklaying Apprentices.

Mr. Gillespie's subject was the bricklayer problem, and he reviewed it very ably from the angle of the practical, organized bricklayer, and though some did not agree with his deductions and conclusions, there was no question of his being well informed on the subject.

He reviewed the ups and downs of the trade of bricklaying from back in those pioneer days when a bricklayer was glad to get 30 cents an hour, to the present year, when in some cases bonuses added to the regular wage scale have run it up as high as \$1.75 an hour. He expressed favor toward the apprentice system rather than text books and training schools, and laid part of the blame for the present situation on the unwillingness of contractors to take on apprentices. Another trouble, he says, is too many theoretical people butting in with ideas and propositions about trade schools. Also he pointed lack of steady employment as a factor in necessitating high wages for bricklaying. He said about the highest maximum he knew of for a bricklayer was 294 days in a year, and the average was all the way from 164 to 204, which made lots of lost time.

Also he gave it as his opinion that the speculative promoter of home building to sell off and realize on real estate was part of the cause for the bonus premium being paid the bricklayers, as they resorted to this means to tempt them away from other work. He expressed himself as strongly in favor of the three-year apprentice system, with apprentices attending night school two evenings a week, as much better than any trade school proposition, and says that contractors should be urged to take on apprentices under this plan.

The Brick Industry Will Carry on.

The one point in his talk with which all were in thorough accord was his prediction that the brick manufacturers can't lose in the future, even if times do get bad. He explained this on the theory that bad times, which will bring lower wages and lower prices for brick, will result in an enlarged demand for brick construction because lumber is growing more valuable right along and the brick building will show up cheaper in comparison with lumber during periods of depression and hard times. So his prediction is that if the times go bad it will eventually react to the benefit of the clayworking industry by leading directly to more brick construction instead of wood.

The second number on the program for Thursday was a review of four years of publicity effort by Louis Grilk of the Geo. L. Dyer Company of Chicago, the agency concern which has had charge of the advertising work of the American Face Brick Association in co-operation with Dr. Mars, who is the official publicity man of the association.

Mr. Grilk said the campaign started four years ago, and though it had not been large in comparison with some other undertakings, it had been consistent, and had produced good results as well as brought many compliments of the plans designed and published as part of the advertising campaign.

Mr. Grilk then illustrated with a series of charts the progress of face brick in comparison with common brick, with terra cotta, with the clay products industry as a whole, with the cement industry, and the lumber industry, and while he only touched briefly on the charted showing he said the charts would be reproduced in printed form soon and made available to all the members for thorough study and future reference. After reviewing the results and surveys to see what progress had been made in the use of face brick today as compared to four years ago, which showed an increase ranging from double to three times, he made a plea for those who are not members to get in at once and join the association because it was a winner. He said that after four years of effort it is plain that they are on the way, making good progress, and the only need now is to keep it up.

What Is the Matter With the Brick Business?

The big feature of this session was the illustrated talk by Magnus W. Alexander, managing director of the National Industrial Conference Board of New York. Mr. Alexander is one of the profound students of human affairs, both industrial and social, and has not only a far-seeing and a good reasoning faculty, but he has recently been abroad in close contact with old-world conditions, so he was well fixed to turn loose a masterpiece discourse on the subject of what is the matter with industry and where it is heading. Also he was equipped with a great display of charts to demonstrate and impress certain points. His charted studies included a survey made as a result of the war on wage problems and the cost of living in the normal prewar year of 1914 as compared to other years, and along with this was charted the wage trend, all of which furnished an interesting study in comparison.

His figures showed that broadly speaking the cost of living for the average family of working people is about 64 per cent above that of 1914. Later on it was shown by another chart that the wage level of today was from 59 to 90 per cent above. In other words, the wage rate of today, on the average, is much higher than the cost of living as compared with the normal year of 1914. His chart showed, too, that in the coal mines, on the railroads, and in the building industries, wages are higher, comparatively, than in the manufacturing industries. In other words, where the wages in manufacturing industries today are 45 per cent above 1914, the wage of anthracite coal miners is 90 per cent above. He then took up the problem of immigration, which was also reviewed with graphic charts telling the story through a period of 100 years, and after pointing out that the present immigration law limiting incoming immigrants to 3 per cent of each nationality, using the census of 1910 as a basis, expires June, 1924, his suggestion was that until we know more positively what our needs are and what our attitude should be, he thinks that we should let well enough alone and re-enact the present law for another two-year period for study and investigation.

Another problem tackled and ably handled was that of taxes, in the process of which he showed that while the federal tax burden is being lessened gradually, meantime we are building up a tremendous state and municipal tax burden, and along with it a great list of tax-exempt securities which increase the burden on people and properties not tax exempt. He said that we had reached the point where about one-fifth of our securities are now tax exempt, and he made a strong plea for more thoughtful attention to this matter, and the fact that today 6 per cent of the national income is going to pay the salaries of public employees.

Costs and Overhead Must Be Reduced.

He recommends for industry generally retrenchment in costs and overhead, and efforts to accumulate surplus and savings to the end that we may be prepared to weather periods of lessened business activity. He said he was not pessimistic over the outlook but he did want to urge some precaution against recklessness, and toward more serious attention to thrift and preparedness for hardships.

Then just to make the crowd feel good and show some cause for real enthusiasm he produced as a final chart one illustrating the world in a circle, the first of which showed a red spot of population for the United States, which is only one-sixth of the world. Then by other charted circles he showed the wonderful accomplishment of one-sixth of the population, which looms up and overshadows all the rest of

the world in many lines of industry, going as high as 80 per cent in some lines. And when the rousing cheer which greeted his interpretation of this charting had subsided, he told the delegates not to be too puffed up at seeing that little dog of one-sixth of the world wagging the biggest kind of a tail. So he told a little story in figures of what a man is made of, or rather what may be produced from a man by rendering him down in the laboratory and separating him out into his elements, which include a little bit of grease to make some soap, a little iron to make some nails, a little sulphur to make some matches, and a few other things, all of which he says can be bought for the sum of 98 cents.

Mr. Alexander was accorded a spontaneous vote of thanks at the conclusion of his splendid summing up of the world conditions and trend.

Following this came a report of the Nominating Committee, made by Eben Rodgers, who said that after thorough consultation and discussion the members of the Nominating Committee had felt moved to offer new material for the officers and directors so as to relieve some of the regulars who had done such good work in the past and to give others an opportunity to do their part. With this preface, he reported recommendation for officers and directors, and the entire list was elected unanimously, after which the meeting adjourned and was followed by a brief session of the new officers and directors.

Officers Elected.

President, B. W. Ballou, Kansas City, Mo.; first vice-president, T. P. Cuthbert, Pittsburgh, Pa.; second vice-president, F. Plumb, Streator, Ill.; directors (three-year term), Howard Frost, Los Angeles, Calif.; S. C. Martin, Pittsburgh, Pa.; Wm. Hanley, Bradford, Pa.; A. B. Adams, Chattanooga, Tenn.; H. C. Kleymeyer, Evansville, Ind.; (two-year term), J. M. Adams, Columbus, Ohio, and J. W. Bogue, Neodesha, Kan.

THE DEALERS' MEETING.

THE FACE BRICK DEALERS' ASSOCIATION of America had two formal sessions during the annual gathering of face brick talks at French Lick Springs, and the members participated in a joint meeting with the face brick manufacturers, at which was developed a simplified and uniform sales contract proposition. Also, as a thing of worth-while benefit to both organizations, they developed a spirit of active co-operation between the two organizations officially and the members individually.

The first session of the face brick dealers was held in the forenoon of December 5. This session was presided over by Burt T. Wheeler, president, with R. N. LaBar, secretary-treasurer, furnishing the records and general support.

The morning session was given over exclusively to official reports and to a discussion of the proposed uniform sales contract as between manufacturers and dealers. This contract was approved and promises to become a factor in simplifying the relationship between dealers and manufacturers, which will help prevent misunderstanding and dissatisfaction.

The first thing in the afternoon session was a report of the committee on nominations, which was presented by John T. Baker of Sunderland Bros. Co., Omaha, Nebr. The officers and directors recommended by the committee and elected unanimously were as follows: President, R. N. LaBar, LaBar, Parsons & Pierce, Scranton, Pa.; vice-president, William N. Fry, Fischer Lime & Cement Co., Memphis, Tenn.; directors, L. J. Bolster, L. J. Bolster Company, Louisville; Ralph Fuller; John H. Donohue, Jr., Corning-Donohue, Inc., St. Paul, Minn.; Burt T. Wheeler, Burt T. Wheeler Brick Co., Chicago, Ill.

The committee left off the secretary-treasurer because it was considered best for the officers and directors to elect or employ someone in this capacity. Also they left off one director, naming only four out of five, so that the executive committee and directors named might have the privilege of naming the additional director themselves.

President LaBar said he would not name these immediately but postpone it for deliberation. After the election of officers, under the head of new business a set of resolutions was read to the effect that the members of the dealers association pledge themselves to do all they can to stimulate

the demand for face brick. Also that they would seek to help the Manufacturers' Association obtain membership from those manufacturers outside of the association, and strive for earnest co-operation between the two organizations as well as between the individual members of each. To this end the resolutions suggested that the president name a committee on ways and means to accomplish the object.

President LaBar asked for permission to deliberate before naming this committee. Also he told about the splendid work that Burt Wheeler had done the past year to maintain an organization and establish friendly contact with the American Face Brick Association. The appreciation of those present of the services rendered by Mr. Wheeler were expressed in the form of a rising vote of thanks.

This brought a brief talk straight to the point from Mr. Wheeler, who urged 100 per cent association spirit on the members, which he interpreted to mean, do unto the other fellows as you would have the other fellows do unto you. He spoke strongly in favor of weekly luncheon meetings as good agencies for ironing out difficulties. He said they will not iron out all the difficulties that beset dealers, but if they will persist in them they will help a lot. And he said this was the thing to do, the dealers themselves get together and clean house among themselves before undertaking to find fault with and correct what they thought were shortcomings among manufacturers.

The new officers and directors held a conference immediately after the adjournment of the regular meeting of the dealers and some active work and real results are expected to be developed in the next few weeks.

IN THE DISPLAY ROOM.

ON THE PARLOR FLOOR attention was called to the display room by a picture frame display of a panel of "Maple-tone" brick from the Mapleton (Ohio) Clay Products Co. This panel was artistically set in a picture frame in such a manner as to make an ideal picture. Inside the display room was a splendid layout, both in panels and sample brick, showing many colors and some interesting pictures of brick homes.

The Brooklyn Brick Co., of which F. G. Banker is president, with a plant at Brooklyn, Ind., and with headquarters in the Chamber of Commerce Building, Indianapolis, made a good showing with rough texture blend.

The Summitville (Ohio) Face Brick Co. had a good showing of Regal Matts and Smooth Red.

The Medal Paving Brick Co., Cleveland, Ohio, rough texture brick and hollow building tile.

B. Mifflin Hood, Atlanta, Ga., announced their "Rivera" roof tile as well as their great line of brick, and in addition to samples showed some interesting pictures of brick buildings.

The Bradford (Pa.) Brick & Tile Co., in addition to an interesting showing in face brick, including smooth red and rough texture, also showed samples of hollow tile.

The Continental Clay Products Co., Canton, Ohio, made a good showing of rough red brick.

The Carlyle-Labold Co., Portsmouth, Ohio, showed an interesting range of colors in face brick from cream tints to chocolate.

Gloninger & Co., with plant at Vanport, Pa., and sales office in Arrott Building, Pittsburgh, made a splendid showing in cream, gray, mottled red and ironstone face brick.

The Finzer Bros. Clay Co., Sugar Creek, Ohio, a red brick showing with polychrome variations in color which were very interesting.

The Fultonham Texture Brick Co., East Fultonham, Ohio, a good showing in yellow and in a red range up to very dark texture brick.

Hocking Valley Clay Products Co. showed a range from soft tan and buff to brown, and featured Greendale Matt.

The Central Refractories Co., Columbus, Ohio, with "Textone" face, made a splendid showing both of face brick and fire brick and included in the face brick a wide range of face colors. They have a system of making a fire clay face on a shale body brick in addition to making the regular shale face brick which gives them an extended and interesting range of colors in face brick.

PERSONAL NOTES.

While the weather was drizzly and unfavorable for motor-ing, still there were several who came in motors.

Mat. M. Clay, of the Clay-Ingels Co., Lexington, Ky., together with Mrs. Clay, drove all the way through from Lexington to French Lick.

J. T. Howington, of the Coral Ridge Clay Products Co., Louisville, went up to Indianapolis, where he had bought a new Cole sedan with balloon tires, and he and Mrs. Howington drove to French Lick and home with it in great state.

H. T. Miles, of the Spahr Brick Co., Maysville, Ky., drove with the Howingtons from French Lick to Louisville.

Bob Yancy and A. H. Fairleigh, of the R. B. Tyler Co., Louisville, drove to French Lick and back to Louisville.

William E. Whaley is another one who drove through from Louisville to French Lick and back.

Fred D. Stiltz, of the Irvington Coal & Lime Co., Indianapolis, one of the dealer contingent, says this has been a fairly good year in the Hoosier capital and things still look very good.

D. Frank Crouch, of the Nashville branch of the B. Mifflin Hood Co., came up smiling at every turn and carried with him the usual sales pep of that aggressive organization.

John Andres and H. C. Kleymeyer had a glowing report of the activities of the Standard Brick Manufacturing Co., at Evansville, during the year. They say it was not a good year in drain tile but it has been a busy year in brick, therefore they have centered their activities on brick and have broken all previous records in the matter of production.

Albert B. Adams, of the Key-James Brick Co., Chattanooga, Tenn., says they have had a big year but will shut down now to make changes and improvements in their plant.

L. M. Munford, of the Central Refractories, Columbus, Ohio, says they have been in the face brick game for about five years now and have built up a good trade as well as a wide range of face brick products.

Some splendid color print reproduction of brick panels were being distributed by the Streator Brick Co., Streator, Ill.

The Carlyle-Labold Co., Portsmouth, Ohio, have a good system of taking just a slab section of face of their texture brick for sample and packing this in small special cardboard boxes for shipment and distribution, which saves weight as well as makes for protection and convenience.

Charles T. Harris, now with the A. S. Reid & Co., 1265 Broadway, N. Y., has all the qualifications for a Kentucky Colonel and if he is still lacking a title and will only spend a little time south of the river he may get it.

Finzer Bros. Clay Products Co., Sugar Creek, Ohio, report that they have had a big year in face brick and hollow building tile and they expect to spread out a little and add four new kilns for the coming year.

The Hocking Valley Clay Products Co. showed some splendid color panel reprints of texture brick which included a wide range of shades and variations in both brick and mortar color that is interesting.

W. H. Hill, of the H. & R. Mining & Manufacturing Co., East St. Louis, Ill., says they got their new face brick plant at East St. Louis started too late in the season to get the full benefit of the present year's demand. They have a splendidly equipped new plant with six kilns making shale face brick at East St. Louis. At Murphysboro, Ill., they operate a paving brick plant, but their new operations in East St. Louis are confined to building brick, and they are turning out an interesting shale brick product in an up-to-date manner.

Somebody said there were three nuts in the face brick game. One is Ryt, of Sumter, S. C., and Guy Dickinson of Little Rock, Arkansas, is the other two. However that may be, both of these are unique and unusually successful in salesmanship and developing the brick business.

Dr. W. F. Demuth, of the Canton Brick & Fireproofing Co., New Philadelphia, Ohio, has developed one of the most interesting color showings in face brick found in the rounds. He had only half a dozen samples with him but they made a splendid showing.

The new president of the American Face Brick Associa-

tion, B. W. Ballou, of the Kansas Buff Brick & Manufacturing Co., Kansas City, Mo., has proven his worth both in the brick business and in association effort, therefore was entitled to the many congratulations showered upon him by his friends.

J. W. Bogue, of V. V. V. Brick & Tile Co., of Neodesha, Kansas, came back to the annual reunion with a pleasant smile indicating a year well spent both in the brick industry and in his job of being mayor of their town. He told last year of their starting into the experiment of equipping their local lighting plant with some modern type Diesel oil engines, and this time he was able to come back with reports of a splendid showing made by them.

Charles F. Hermann, of the U. S. Brick & Tile Co., Tell City, Ind., says it was a big year with them and they are still going strong. It is his intention to break away during January, however, and make a trip to California in advance of the big gathering there, but he hopes also to participate in the C. B. M. A. Convention.

F. Graham Williams, of the F. G. Williams Brick Co., Atlanta, is one of the consistent golf enthusiasts and says he likes the French Lick course better than the West Baden

grounds. He had an average of about two rounds a day all through the convention. Speaking of business in Atlanta, he says it has been a big year in building operations and there has been a goodly volume of face brick sales.

Henry C. Kleymeyer is contemplating making a trip to the C. B. M. A. annual at Los Angeles.

B. Mifflin Hood, of Atlanta, still shines out as an apostle of salesmanship in the brick industry, and the Hood organization is as usual continuing its aggressive sales work.

H. H. Klocke, Continental Clay Co., Columbus, says it has been a fair year with them but not a record-breaker.

G. C. Landgrebe, of the Huntington (Ind.) Pressed Brick Co., was one of the busy ones in a busy district the past year, and came up to the convention looking as if hard work and busy times agree with him.

William P. Varney, Chicago representative of the Hydraulic-Press Brick Co., says it has been a fairly good year in the Chicago territory, with a goodly volume of business, and the big city is making a good showing through the winter months too.

Those in Attendance at the American Face Brick Convention.

ACOMB, E. E., The Pursell Co.....Dayton, Ohio
 ADAMS, A. B., Key-James Brick Co.....Chattanooga, Tenn.
 ADAMS, J. M., Ironclay Brick Co.....Columbus, Ohio
 ADAMS, HARVEY C., Danville Brick Co.,Danville, Ill.
 ALLEN, AURELIUS, Richards Brick Co.....Edwardsville, Ill.
 ALEXANDER, M. W., Nat'l Industrial Conference Bd...New York City
 ANDRES, JOHN, Standard Brick Mfg. Co.....Evansville, Ind.
 ASCHEMEYER, F. C., Hydraulic-Press Brick Co.....St. Louis, Mo.
 AUSTIN, C. P., Binghamton Brick Co.....Binghamton, N. Y.
 BAKER, JOHN T., Sunderland Bros. Co.....Omaha, Nebr.
 BALDWIN, HARRY L., American Face Brick Assn.....Chicago, Ill.
 BANKER, F. G., Brooklyn Brick Co.....Indianapolis, Ind.
 BANKER, MRS. F. G.,Indianapolis, Ind.
 BALLOU, B. W., Kansas Buff Brick & Mfg. Co.....Kansas City, Mo.
 BARNETT, E. G., Geist Bldg. Mtl. Co.....Cleveland, Ohio
 BARNHART, W. R., Medal Paving Brick Co.....Cleveland, Ohio
 BASS, GEORGE A., Hydraulic-Press Brick Co.....St. Louis, Mo.
 BELDEN, P. B., Belden Brick Co.....Canton, Ohio
 BELL, N. H., Fredenburg & Lounsbury.....New York City
 BILQUE, GEO. A., Gloninger & Co.....Pittsburgh, Pa.
 BINYON, L. D., S. S. Kimbell Brick Co.....Chicago, Ill.
 BITTER, FRED H., Am. Enameled Brick & Tile Co.....New York City
 BLACK, JOHN H., Jewettville Clay Products Co.....Buffalo, N. Y.
 BLACK, W. C., Hay-Walker Brick Co.....New York City
 BOLSTER, L. J., L. J. Bolster Co., Inc.....Louisville, Ky.
 BOLSTER, MRS. L. J.....Louisville, Ill.
 BONNER, CHAS., Bonner & Marshall Brick Co.....Chicago, Ill.
 BOWEN, CHAS. A., Common Brick Mfrs. Assn.....Cleveland, Ohio
 BOWEN, DANA T., Bowen Brick & Supply Co.....Cleveland, Ohio
 BRICKEL, MRS. W. D., Ironclay Brick Co.....Columbus, Ohio
 BOGK, F. C., Ricketson Mineral Paint Works.....Milwaukee, Wis.
 BOGUS, J. W., V. V. V. Brick & Tile Co.....Neodesha, Kans.
 BOYD, CHAS. D., Ricketson Mortar Colors.....Milwaukee, Wis.
 BROWN, E. M., Standard Brick Co.....Crawfordsville, Ind.
 BRYAN, CHAS. H., Common Brick Mfrs.' Asso.....Detroit, Mich.
 BULKLEY, L. A., Columbus Builders' Supply Co.....Columbus, Ohio
 BUTTERWORTH, F. W., Western Brick Co.....Danville, Ill.
 CABLE, WALTON W., Walton W. Cable Co.....New York City
 CADMUS, E. L. R., N. J. Masons' Material Asso....Bloomfield, N. J.
 CAMPBELL, H. H., Toronto Fire Clay Co.....Toronto, Ohio
 CARLYLE, G. E., Carlyle-Labold Co.....Portsmouth, Ohio
 CARLYLE, MRS. G. E.....Portsmouth, Ohio
 CARLYLE, EDW. C., Carlyle-Labold Co.....Portsmouth, Ohio
 CARPENTER, AMOS M., Amos M. Carpenter.....Kalamazoo, Mich.
 CHAFFEE, H. S.....Buffalo, N. Y.
 CHILDS, ROBERT W., Good, Childs, Bobb & Westcott....Chicago, Ill.
 CLARK, E. C., Kittanning Br. & Fire Clay Co.....Pittsburgh, Pa.
 CLAY, MATT M., Clay-Ingels Co.....Lexington, Ky.
 CLAY, MRS. MATT M.....Lexington, Ky.
 COLBURN, R. R., Ochs Brick & Tile Co.....Minneapolis, Minn.
 CONLEY, EDW. T., Bradford Brick & Tile Co.....Bradford, Pa.
 COOPER, R. B., Fiske & Co., Inc.....New York City
 COWMAN, G. G., Claycraft Mining & Brick Co.....Columbus, Ohio
 COWMAN, MRS. G. G.....Columbus, Ohio
 CROUCH, D. FRANK, B. Mifflin Hood Brick Co.....Nashville, Tenn.
 COBLE, A. M., A. M. Coble Brick & Tile Co.....Erie, Pa.
 CUTLER, L. R., Entwisle & Co.....New York City
 DARROW, A. H., Wls. Face & Fire Brick Co.....Milwaukee, Wis.
 DAVIS, A. E., Western Brick Co.....Indianapolis, Ind.
 DEAN, G. P., Protenhauer Nesbit Co.....New York City

DECKMAN, CHAS. G., Medal Brick & Tile Co.....Cleveland, Ohio
 DEFREES, V. W., C. H. Defrees.....South Bend, Ind.
 DEGENHART, W. JOS., Jewettville Clay Products Co...Buffalo, N. Y.
 DEMPSTER, A. P., Am. Enameled Brick & Tile Co.....New York City
 DEMUTH, DR. W. F., Canton Br. & Fireproofing Co.....
New Philadelphia, O.
 DICKINSON, GUY, Ark. Brick & Tile Co.....Little Rock, Ark.
 DOLBEN, J. ALFRED, Dolben & Co.....Boston, Mass.
 DONOHUE, JOHN H., JR., Corning-Donohue, Inc.....St. Paul, Minn.
 DORE, HERBERT, Official ReporterChicago, Ill.
 DOWENS, A. H., Cook & Brown Line.....Oshkosh, Wis.
 DUTY, SPENCER M., Medal Brick & Tile Co.....Cleveland, Ohio
 ELLINGEN, O. J., H. D. Conkey Co.....Mendota, Ill.
 ELWOOD, CLYDE B., Watts-Morehouse Co.....Jackson, Mich.
 ENTWISLE, E. B., Entwisle Co., Inc.....New York City
 ENTWISTLE, JOS., Terre Haute Vit. Brick Works...Terre Haute, Ind.
 ERNSTBERGER, CHAS. A., Tomkins Bros.....Newark, N. J.
 EVERHARD, M. Mc., Everhard Co.....Massillon, Ohio
 FAIRLEIGH, A. H., R. B. Tyler Co.....Louisville, Ky.
 FINDLAY, R. L., Hay-Walker Brick Co.....New York City
 FINZER, W. D., Finzer Bros. Clay Co.....Sugar Creek, Ohio
 FISK, WILBUR C., Hocking Valley Prod. Co.....Logan, Ohio
 FLANDERS, ED., Marietta Shale Brick Co.....Marietta, Ohio
 FOWLER, J. C., Watstown Brick Co.....Watstown, Pa.
 FREEMAN, T. B., Hay-Walker Brick Co.....Pittsburgh, Pa.
 FRIEDLANDER, M., Hazelton Brick Co.....Hazelton, Pa.
 FRY, W. N., Fischer Lime & Cement Co.....Memphis, Tenn.
 GAERTNER, E. C., Clay Products Co.....Brazil, Ind.
 GAMMON, M. E., Building Supply News.....Chicago, Ill.
 GEIST, H. F., Independent Brick & Tile Co.....Cleveland, Ohio
 GIFFORD, W. H., Bowen & Supply Co.....Cleveland, Ohio
 GILLESPIE, R. M., Masons' Contractors' Asso.....St. Louis, Mo.
 GLONINGER, JOHN R., Gloninger & Co.....Pittsburgh, Pa.
 GOAR, FRANK, W. G. Bush & Co.....Nashville, Tenn.
 GOAR, MRS. FRANK.....Nashville, Tenn.
 GOULD, H. H., Belt Line Brick Co.....Minneapolis, Minn.
 GRAND, E. F., E. F. Grand Brick Co.....Cincinnati, Ohio
 GRILK, LOUIS, Geo. L. Dyer Co.....Chicago, Ill.
 GRIMSLEY, E. F., Hanover Brick Co.....Hanover, Ohio
 GUNN, E. A., The Mars Co.....Cleveland, Ohio
 HALL, JOE T., J. T. Hall & Co.....Harrisburg, Pa.
 MILTON, H. S., McArthur Brick Co.....McArthur, Ohio
 HANLEY, W. L., JR., Bradford Brick & Tile Co.....Bradford, Pa.
 HANSON, HARRY N., Toledo Plaster & Supply Co.....Toledo, Ohio
 HARBISON, R. C., Gaddis-Harrison Brk. Co.....Dayton, Ohio
 HARKER, O. A., JR., Dixie Brick & Tile Co.....Puryear, Tenn.
 HARMS, JOHN, Lookout Paint Mfg. Co.....Chattanooga, Tenn.
 HARRIS, CHARLES T., A. S. Reid & Co.....New York City
 HARRISON, CHAS. F., Gaddis-Harrison Brick Co.....Columbus, Ohio
 HARTUNG, PAUL W., Belden Brick Co.....Canton, Ohio
 HEIZER, R. C., Toledo Plaster & Supply Co.....Toledo, Ohio
 HERBERT, T. L., JR., W. G. Bush & Co.....Nashville, Tenn.
 HERBERT, MRS. T. L.....Nashville, Tenn.
 HERMAN, E. OLNEY, Tiffany Enameled Brick Co.....Mokence, Ill.
 HERRMANN, CHAS. F., U. S. Brick Co.....Tell City, Ind.
 HERVEY, E. C., Hydraulic-Press Brick Co.Indianapolis, Ind.
 HILL, W. H., H. & R. Mining & Mfg. Co.....E. St. Louis, Ill.
 HILSMEIER, THEODORE, H. Pressed Brick Co.....Huntingburg, Ind.
 HINDMAN, F. T., Fischer Lime & Cement Co.....Memphis, Tenn.
 HOAGLAND, W. H., Claycraft Mining & Brick Co.....Columbus, Ohio

(Continued on Page 598)



Hollow Building Tile

A Department Devoted to this Particular Branch of the Clay Industries

DEALER STOCKS IN TILE.

ONE OF THE GOOD things shown by the reports of field representatives of the Hollow Building Tile Association is that interest is being developed among retail dealers in the matter of stocking with tile.

There is noticeable here a marked point of difference between the retail dealer in lumber and building material and the retail dealer in building material other than lumber. The dealers in hard building material practically always stock fair quantities of hollow tile, of brick, and of flooring tile and other clay products, while the lumber dealers until recently have not given much attention to the stocking idea. Now, however, there is a noticeable interest among lumber dealers in the matter of stocking tile.

A review of reports about tile carried in stock by dealers shows that it is the 5x8x12 size which is more widely stocked than any other. There is seemingly more stock of this size being carried than all other sizes combined.

There is in the situation a reminder that elimination and more thorough standardization will help in this matter of promoting stock carrying on the part of dealers. It is confusion as to sizes and probable requirements that has interfered with this in the past and a settling on to a few standard sizes will do more than anything else to encourage that stock carrying by dealers which makes for better business.

INDIVIDUAL ADVERTISING.

One of the good constructive ideas of James T. Howington, President of the Hollow Building Tile Association, which The Clay-Worker heartily endorses is that of promoting more local advertising on the part of individual manufacturers of hollow building tile. The Hollow Building Tile Association has done some splendid widespread advertising, and individual members are doing some good advertising work for the trade papers, all of which is helpful but it is not enough. To properly round out the idea of exploitation and interesting the public individual manufacturers should do more local advertising.

Fortunately, too, the Hollow Building Tile Association, with headquarters in the Conway Building, Chicago, is prepared to co-operate with and help those who are interested in this matter of local advertising. They have not only had prepared many interesting and attractive cuts featuring hollow building tile, but they have followed this subject of helping advertisers up until they are now organized to render a service practically equal to the expert service of advertising agencies. So there is helpful encouragement to be had here for more local advertising and helpful direction in making it specific and effective.

Announcing your products and their use through adver-

tising in periodicals is one of the effective agencies which has contributed a lot to making this the greatest country in the world in the production and distribution of the many things needed and desired by mankind. The hollow building tile industry right now is at a stage where advertising properly done should prove unusually effective and lead to a much wider use of tile. The great need right now is for more active interest on the part of individual manufacturers in local advertising.

SIMPLIFICATION FOLLOW-UP.

THE HOLLOW BUILDING TILE ASSOCIATION is setting up a permanent committee to follow up the good work of the recent simplification conference at Washington, with H. R. Straight of the Adel (Iowa) Clay Products Co. as chairman. The committee as a whole is to be composed of three representative manufacturers, three distributors and three consumers. Other committee members already named by Mr. Straight are F. R. Hale of the Vigo-American Clay Company, Terre Haute, Ind., and R. G. Wallace, National Fire Proofing Co., Pittsburgh.

TILE GROUP DIRECTORS.

AT THE DECEMBER group meetings of the hollow tile folks is the official time for the election of officers and of group directors. The term of office of both the group director and group chairman expires at the annual meeting of the parent organization in January, therefore it is up to each group to elect its chairman and nominate its group director at the December meeting.

The Group 2 meeting in Cleveland started the ball rolling at its recent gathering by electing Leo Childs of the Hancock Brick & Tile Co., group chairman, and L. P. Winterhalter of the O. C. Barber Allied Industries as group director.

Other groups are being reminded that these offices are important and they should give consideration to persons best fitted for the service and make their elections at the December group meeting.

HOLLOW TILE PRODUCTION PROGRESS.

There are two noticeable things about the tabulated progress of hollow tile production and value during the past 23 years. One is that the production tonnage has more than doubled, and the other is that prices are lower today than they were 20 years ago. The production back in 1909, as shown by the tabulated figures of the Hollow Building Tile Association, was 1,217,000 tons, at an average price of \$8.32

a ton. The production in 1922 was 2,869,395 tons, at an average price of \$6.87 a ton. Last year was the biggest year on record in point of tonnage, and the only matter for regret in the record is the evidence that the tile was sold at too low a price for the business to prove as profitable as it should. Economies in manufacture will naturally help some, and the tile industry is making good progress in this, but surely not enough to offset the remarkable increase in wages and other items of cost as compared with ten years ago. There are some signs that 1923 may top the 1922 production, and for the sake of the profit side of the ledger it seems there should be a closer checking up on costs, so that the prices quoted may be at least high enough to cover cost and leave a fair allowance for profit margin.

CEMENT COMPETITION.

THERE WAS a recent story in one of the stone trade papers about a brick plant down in the Baltimore territory turning out on a rather large scale a cement brick in which it seems a sort of steam curing process is used, and it looked like enough progress had been made to indicate that the cement brick may become in some sections of the country at least a more or less serious competitor of the burned clay brick. Moreover, from time to time, there has been found among the brick men in the rounds some samples of cement brick, including not only these in natural color, but some that have been given a special face color pointing plainly to persistent efforts at developing a cement or concrete brick as an item of importance in building material.

And now comes a bulletin report from the Hollow Building Tile Association which includes the following: "The activities of interests pushing cement hollow blocks has recently been brought to our attention. This activity is to cover the entire United States but at present is being centered in the Southeast. The Chattanooga plant is making 8x5x12 and has a capacity of 40 tons daily and it is reported that to date none of the tile produced has remained in the yard the required 28 days for seasoning on account of the demand. This plant steam cures and gets 28-day strength in 15 days. The 8x5x12 over the country will average about 20 pounds. It is contemplated to construct three plants in Florida, located in Jacksonville, Miami and Tampa, with daily capacities of 100 tons daily each. These plants will use a coral rock for their course aggregate which is very cheap and light. They claim a test was made and showed a strength of 700 pounds.

"Plants are being promoted in Atlanta, Ga.; Knoxville, Tenn., and Montgomery, Ala."

The cement people have been very aggressive, not only in publicity but in research work, to extend the use of their products, and they are not overlooking the opportunities in either brick or hollow tile, but are pushing work in these lines in a manner which should make the clay products people thoughtful and should lead to more effort, both in publicity and in research work, to develop new uses for brick and hollow building tile, and to promote the interest of these products in the public mind.

It is certainly high time for us to put on another "build with brick" campaign and for the clayworking industry generally to gird itself up for an active campaign to boost clay products. All feel that we have in clay products the best building material the world can offer, but that is not enough. We have to put this feeling across to the general public, and the sooner we get busy at it, the better. Getting busy at extending the interest in and the uses of clay products

will not only help relieve competition within the trade itself by creating a larger demand, but it is now plainly evident that we are to have some competition from cement sources and we need a combination of enterprises and co-operation to meet this and get for clay products the showing they are entitled to in the building world.

BIG BRICK CONVENTION IN CALIFORNIA IN 1924.

AT THIS WRITING practically all arrangements have been made for the big trip of the Common Brick Manufacturers' Association of America to their convention in Los Angeles, Cal., in February next year. A large amount of interest has been aroused and a large number of brick manufacturers from the South and east of the Mississippi River have made their arrangements to go in the special trains from Chicago to Kansas City provided by the association. Two trains will leave Chicago at 11:30 o'clock on Saturday evening, February 2, 1924, one over the Chicago, Rock Island & Pacific and the other over the Chicago, Burlington & Quincy Railroad, both meeting at Denver on the morning of Monday, February 4. The special train, or special cars on the regular train, from Kansas City, will also arrive at Denver at practically the same hour. From there on the trains will be run in two or three sections as seems necessary for the balance of the trip. Over 300 reservations have been made from east of the Mississippi River and many more will join the train en route through Iowa, Kansas, Nebraska, Colorado, Utah and Northern California. Practically all of the brick manufacturers on the entire western coast have stated their intention of being at the convention in Los Angeles and from all indications it is to be one of the largest conventions of brick manufacturers ever held on the west coast or any other section of the country.

Ralph P. Stoddard, secretary and manager of the association, is in California at this time in connection with working out the details of the convention and in helping the California brick manufacturers in their association work. He has advised Mr. Bowen, assistant to the president at the Cleveland office and who is in charge during his absence, that every effort is being made by the California brick manufacturers to make this trip an outstanding one from every standpoint, not only from the matter of convention but from the standpoint of sightseeing as well. Mr. Stoddard says: "When the brick manufacturers of the East and Central West hear of the wonderful convention program being arranged, fascinating side trips, not only en route but after arriving in California, to Riverside, Pasadena, Movie Land, Old Mexico and the great mystery stunt which the brick manufacturers of Northern California are going to present at Port Costa, those who stay home will be so sore they will blame us for not making them come. If all could know arrangements Californians are making, every man's son would be here with his family in February."

The reservations for the special trains were closed on December 15. The cause for closing the reservations this early was that at the time of the year when the trip is being made there is always a tremendously heavy travel to the South and West by the general public, and equipment is hard to get unless arrangements are made a long time in advance. Every effort is being made by Mr. Bowen, who is handling the convention arrangements and the special trains, to take care of the party in the most comfortable manner and so far as the trip, etc., is concerned, every detail has been worked out so that those in the party will have no cares at all. Full details of the convention program and the entertainment feature will appear in the next issue of The Clay-Worker.

Observations of the Streets and Roads of Europe.

By Will P. Blair, Vice-President of the National Paving Brick Manufacturers' Association, Cleveland, Ohio.

Mr. Blair attended the International Road Congress at Seville, Spain, the past summer, as a representative of the National Paving Brick Manufacturers' Association, and his report, which will be published in this and subsequent issues of *The Clay-Worker* will prove very interesting reading. No one is better qualified to compare the roads of Europe with those of our own country than the "Grand Old Man" of the paving brick industry. We will give Mr. Blair's impressions of streets and roads of Holland in the January issue.

No. 2.

British Streets and Roads in England and Scotland.

THE ENGLISH streets and roads more closely parallel in all problems of construction, maintenance and use, those of America than those of the European continent. London, however, like Paris, as to her principal thoroughfares, is a wooden block town and her outlying streets are macadam. A larger percent are of bituminous than in Paris, and a few streets are paved with granite.

I was informed by a prominent engineer of London that frequently the life of concrete foundations was no longer than that of the wooden block wearing surface, regardless of its depth or thickness, in many instances it being eighteen inches thick; that on reconstruction of the wearing surface the concrete was found so crushed, from contraction and expansion, from the intermittent supply of water and moisture, that the practice was to install a new foundation entirely.

I saw a number of reconstruction jobs where this practice prevailed. One foreman in charge of a job of this character said that he seldom found any part of the concrete base fit to remain. An exposed concrete base ready for the discard showed it crushed into fragments not larger than the original aggregate. In another instance the pieces ranged from the size of your fist up to that of your body. One peculiarity was that in some cases where the concrete was thoroughly crushed, it occupied a less space than when originally placed. In such cases the result was a depression in the wearing surface corresponding with that in the foundation. In some reconstruction jobs a wire mesh was being used for reinforcement, but engineers with whom I discussed the matter regarded it with doubt and as being merely experimental.

London wood block streets incur further expense beyond their normal wear, in an effort to make them more serviceable. Lamp posts stand in the middle of the streets, and by the side of each of them there is a huge metal box containing a supply of flint gravel the size of a pea and less, which is used to scatter over the street surface. This is driven into the blocks by the traffic. The purpose of this practice is to insure the traffic against slipping and skidding. The blocks wear faster under this treatment, but the increased wear is justified by the fewer resulting accidents.

This behavior of concrete as a foundation for London streets need not be regarded with surprise. It simply sustains what progressive engineers know to be taking place in our own country. Whether London can effect by some means a durability of her concrete foundations or find a substitute is a question in which she is much concerned at the present time. In this, as in all other road problems, the engineers of Europe are no nearer a satisfactory and definite conclusion which meets with general acceptance, than we. But they occupy a position very much akin to the stand now so noticeable with courageous engineers in this country. They are more disposed to freely condemn practice in highway construction that is wrong, but adhered to for no other reason than "that was the way it was done before." They are like-

wise more insistent for newer and better methods which through research and use have a proven value. Hindrance to progress is likewise very much the same as with us.

A Scotch engineer summed up a discussion of this question very aptly: "Did you ever travel in a rut and find it a whole lot easier to travel ahead in, than to try to get out?"

There are no brick pavements in London. No effort hitherto has been made to introduce them. But the English brick manufacturers deserve great credit in maintaining brick in its rightful place for other structural purposes. London is a brick built city. In north England an immense supply of easily worked stone takes the place of brick throughout that area. In over a thousand miles of travel over the roads in England and Scotland, I saw but one concrete bridge.

These brick structures show no signs of decay or impairment that in any way interferes with their use, yet many of them are ages old. Frame structures of any kind are out of consideration altogether.

The country highways throughout England and Scotland are receiving much more than ordinary repairs. This is to be accounted for upon two grounds; the general business slump from which England is at the present time suffering, there being 1,500,000 men out of employment, thus of necessity furnishing the first reason—affording work for their unemployed. The second reason is the general out-of-repair condition of her roads. We motored with Mr. and Mrs. Hervey Haigh 170 miles over the Great North Road, then diverging to northwest to Slaithwaite (Mr. Haigh's home, 34 miles). In this journey we encountered approximately 85 repair forces ranging from a half dozen to 40 men. The road has a wearing surface of 30 feet in most places. The berms are 12 feet to the center of the ditches. Where the ditches are open they are unusually narrow and deep. Outside the wearing surface the growth of grass is most profuse, overhanging the edges of the open ditches sufficient to hide them from view.

At one point on the Great North Road, where quite a stretch was torn up for reconstruction, a sudden halt in the work was made. The stretch ahead was in perfect order, showing no signs of impairment, and it was learned that but slight surface repairs on the particular section ahead had been needed for several years. From the center of the road over to the ditch, where the tearing up had stopped, the character of the construction of the good stretch ahead was easily observed by the cross section exposed. About three feet below the wearing surface a ten-inch layer of soft stone in flat flakes and of various sizes was laid, reaching over to the edge of the ditch. It was perfectly apparent that a road with that kind of water disposal and elimination of moisture from the superstructure could not be easily injured from natural causes. The superstructure was perfectly dry. After a stretch of about seven miles repairing began again.

Who put in the layer of coarse flat broken stone, or when, could not be ascertained. To all outward appearances, the condition of the road, the growth of grass from the edge of the wearing surface to the ditch, the hedge beyond the ditch, all indicated an undisturbed condition existing at least for several years.

I became the guest of the Road Committee of the County Council of Yorkshire and their engineers, on a study and inspection trip, occupying the better part of the week. I was at once impressed by the ability of the chief engineer and surveyor, Mr. R. H. Hepworth, particularly in his familiarity and understanding of practically every problem encountered. I was more impressed by the character of the men constituting the membership of this committee. Evidently each one bore the burden of heavy responsibility in business affairs, yet they were devoting their time without compensation to official duties, as though that duty embraced their entire life's activities.

It was first a study of a road bearing a heavy traffic that had cost this or that sum in repairs, and what should be done to the road to avoid great repair expense of the future. What

heavily trafficked sections granite was looked upon as a necessity. Plain gravel macadam and some form of bituminous macadam are the prevailing wearing surfaces. We did not encounter a single concrete foundation anywhere. English engineers are satisfied that a broken stone foundation, properly installed with careful drainage provisions, is best. The discussion of the use of brick was necessarily limited, for the reason that it must be understood that in England the brick manufacturers are merely in their initiatory effort to produce a brick of suitable quality for paving, so that a discussion of the use of brick by officials without an available supply could hardly be expected. Hope was expressed by engineers that a supply adequate for the want, and of quality acceptable, might soon be produced.



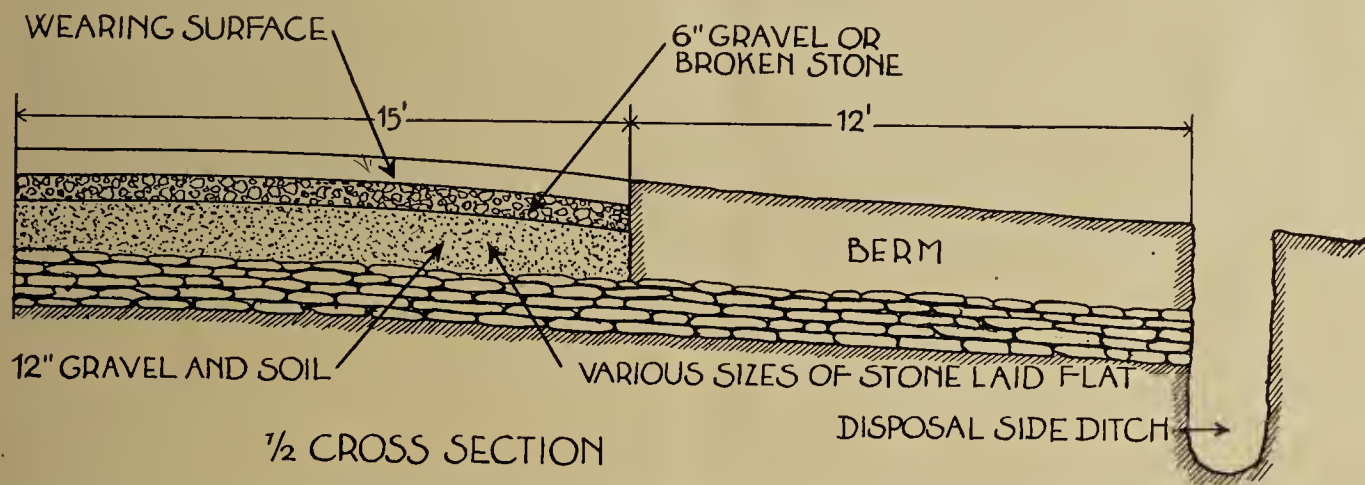
A Worn Stone Block Street in London.



Crushed Stone Ready to Be Taken from the Street for Reconstruction.



A Gravel Macadam Street in the Suburbs of London.



An Approved English Cross Section Providing Water Disposal. It Drains, Prevents Capillary Flow of Water and Moisture Into the Superstructure—It Supports the Wearing Surface. The Least Expensive Because it Functions in All Requirements and Its Durability Is Apparent.

really was the fundamental cause of the early destruction of this road, and why another road suffered less injury. Straightening out curves, widening the road, careful examination of bridges.

But of all the problems encountered, the chief concern was the elimination of water and moisture from underneath the roads. I was somewhat surprised to find a common acceptance with all the engineers and the council itself, that at the present time that was the chief problem with which they had to deal, to bring about ultimate economy in road construction and maintenance.

Most of these roads which came under inspection were primary roads, so called. But very little attention was given to secondary roads.

So far as the wearing surface is concerned, in a few very

The practice of official inspection, such as we took part in, is new to England. The engineer has had to struggle somewhere between his own good judgment and the uncertain public opinion, or politics as it is called in this country. Hitherto he has had no support such as was being accorded to Mr. Hepworth, the Yorkshire engineer, in almost every problem explained by him to his council. When they said "You're right" in this and that, a gratifying responsibility at least in part was shifted from him to his superiors, and he at once became possessed of strong influence in securing money for the project.

Repairs are made by the County Council where needed. The Minister of Transport grants the budget for the several counties upon the council's showing of their respective needs, but little money from the National Treasury is granted for

repairs on secondary roads. Funds for such roads must come from the local organizations.

As to all the countries visited, I found no real business system of cost accounting and data preservation. As a consequence, like the practice in our own country, heavy repairs slip by year after year, when reconstruction should have been the order, along with a design and material to meet, with economy, the existing condition. With no record of the past as a warning and a guide, good judgment is rarely exercised. All with whom I discussed this question agreed that if they only knew what had been done before, a repetition of mistakes could be avoided and a great saving would result.

On one section of the Wakefield and Austerland road, being a part of the main road from Leeds to Manchester, two miles in length, the repairs have cost each year for the last past five years, \$50,000 for the two miles. No one knows of its exact construction in the first place. Whatever it was, it was not suited to the traffic and probably was not suitable to the natural conditions surrounding. The reconstruction of this particular two miles has just been let for 42,000 pounds (approximately \$200,000). Sounds very much like the history of some of our own roads.

The cost of repairs on a three-mile stretch of another road equaled, in a period of two years, the sum at which a contract was let for its reconstruction. Many sections of road were encountered of which the engineer declared, and to which his committee agreed, that the fundamental economy lay in eliminating the water and moisture from the artificial foundation. For this purpose stone of any quality and shape is used and successfully so. Whatever kind of stone is obtainable at the least cost is the choice; hard or soft, just so it be sufficient to carry away the water and hold a volume of air sufficient to break down the capillary flow of water. The stone is laid according to shape and character as quarried, most frequently flat, as the layers or shelly character is found in the stone deposits. The writer took a photograph of a road section under construction, utilizing the stone as it came from a nearby quarry, which will be found among the illustrations accompanying this report. The construction met the approval of the chief engineer and the council committee. Not a single concrete foundation was encountered on the country roads of the many miles inspected, nor could I learn of any.

I could not but reflect what a wonderful advantage it would be to our own industry if our members could indulge in a week's critical examination of the varied manner and methods of construction with which vitrified brick are installed in pavements and resulting conditions, studying why the differences found in this or that road. Such an itinerary has a time or two been resolved upon, but never carried out. No other one thing in my judgment would return so large a benefit.

My observations of roads in Scotland were limited, but so far as I was able to discern I saw no great difference either as to roads or as to conditions. The city of Edinburgh undoubtedly is living up to her reputation as having the best granite streets of any city in the world.

(To be Continued.)

NEW OMAHA SALES OFFICE.

To take care of their trade in the Omaha territory, the Weller Manufacturing Co., Chicago, will open a sales office at 627 Grain Exchange Bldg., Omaha, Neb. Mr. O. F. Barklage, of the Industrial Sales & Engr. Co., will be in charge. Mr. Barklage is a graduate engineer and is well fitted to take care of the problems that arise in the mechanical handling of the raw materials and finished products.

MORTAR COLOR—ITS USE AND ABUSE.

By Frederick C. Bogk, President Ricketson Mineral Paint Works, Milwaukee, Wis.

PART II.

IN MY FIRST article in *The Clay-Worker* for November, I discussed the relative merits of the dry and paste colors. In this concluding article I will try to lay down a few general rules for the use of the dry colors, which have practically superseded the old paste product.

It is obviously impossible to lay down a set of rules or a mixing formula for the use of dry colors, however, as the width of the joint and depth of shade desired will really determine what amount of color should be used. For laying 1,000 brick from 75 to 125 lbs. of color should be used, depending on the color and the width of the joint. As all good cooks seldom follow the written receipt, but add measures of good sense and good judgment to whatever they are making, so the man at the box must likewise use good sense and good judgment in the mixing of his colors with mortar.

A few fundamental and never to be violated rules can, however, be set down, and include these:

First—If lump lime is used in place of hydrated lime, it must be thoroughly slaked and allowed to cool at least 24 hours before the color is added. Hot lime, or even warm lime, fades the best of colors.

Second—The dry colors should be mixed thoroughly with sand, hydrated lime and cement before the water is added. After the water is added the mixing should be continued until the mass is free from spots or streaks of color.

Third—Measure or weigh mortar color; do not guess.

Fourth—Use mortar as thick as practicable. Don't use a "thin" mortar. Keep the different batches as near the same consistency as possible.

The first lot of color should be weighed, and after this has been done and the right shade secured, a measure holding that amount should be used for all subsequent batches of mortar. This is the only way in which a uniform shade can be secured.

That the contractor may be sure of the shade, it is best to make up some sample panels before starting the job. Make the panels as thick as the finished wall, and back them with mortar, so the drying will be under normal conditions. Mortar dries out lighter than it appears when wet.

Poor color results can be obtained by:

Guessing at quantity of color used and not actual weight. Insufficient mixing with the sand, cement and lime.

Skimping in quantity of color.

Mixing color with hot or even warm lime (when lump lime is used).

It has been our experience, covering almost forty years in the business, that poor results with color when traced have been due to one or more of the above causes.

It is always better for the contractor to overestimate on color needed on a job than underestimate. This is more apt to insure material of the same run and of the same shade. The best of colors sometimes will vary a little, and if the contractor will get all the color he needs for the job at one time the chance of variation in shade is more remote.

Poor results can be secured with the best of colors when abused and not properly used. Good colors can not withstand poor workmanship, nor can poor colors be made to "stand up" with the best of workmanship.

It is true there are some poor dry colors on the market today, and it is the use of these that is striking at the very fundamentals of the mortar color business, and prejudicing many architects and prospective builders against the use of the colored mortar joint.

With the use of a recognized standard mortar color, and following out the directions and formula gotten out by the different manufacturers, the best of results can be secured and "color harmony in brick and mortar" will be a reality.

Written for The Clay-Worker:

THE BRICK AND CLAY TRADES IN INDIA.

S. B. Baneyea, Calcutta, India.



O RELIABLE statistics as to the number of people engaged in the various kinds of clay trades can be had, but roughly estimated a million persons are undoubtedly engaged in that industry in India. India is the land of castes. Here potters form a separate caste, known in Bengal, as the "Kumbhakans"; in Northern India as "Kumhans." They follow in the footsteps of their ancestors using no machinery of any kind, but are able to turn out beautiful pots, vessels, clay figures, jars, etc. The toys of Krishnagar, Bengal, Lucknow, etc., are famous the world over for their neat designs, beautiful workmanship, etc. They are priced moderately and so command large sales.

Brick have been manufactured in India from time immemorial. Before the discovery of coal, brick were burned with firewood. Brick houses 1,000 to 1,500 years old still exist. Though in a dilapidated condition they are preserved

Tile are burned in kilns, and it costs about twenty to twenty-five rupees. Tiles are graded in three classes.

The brickmaking season begins in October; that is to say after the monsoon and lasts until the end of May. The brickmakers are drawn from certain classes who are experts in their line. They have to be paid a month's salary in advance, which is popularly known as "peshgi" or "dahdon." It varies between fifteen and thirty rupees. A real expert gets fifty rupees. The "dahdon" system is not quite safe as "dahdon" takers sometimes go over to parties offering higher salaries. As people advancing "dahdon" very seldom care to go to the courts, the "dahdon" takers are able to enjoy their ill-gotten gains. Expert snatching is a not unknown game. Necessity knows no law.

European firms, I should state, manufacture brick along up-to-date principles. Naturally they get satisfactory results, and they command good prices. Some of the provincial governments in India have their brick and tile works. However, they do not sell their output to the public, but utilize them in their own buildings. Needless to say the government manufactured brick are of the first grade.

Fire brick and other patent brick are manufactured by



Pottery Being Made in India by Prison Labor.

as ancient historical monuments. The brick are thin, but otherwise strong and well made.

Nowadays, those who can afford it, burn their brick in Bull's patent kilns. Much depends on the firing, but on an average seventy-five to eighty per cent. of good brick can be had. The remaining twenty-five per cent. is what is called "jhama," suitable for roofing, flooring, etc. Including everything the cost of manufacturing brick averages about sixteen to eighteen rupees per thousand. The brick are sold at twenty to twenty-five rupees, according to grade.

Three years ago there was a boom in the building trades when the price of brick went up as high as fifty-five rupees per thousand. A number of people in the hope of getting rich quick went into the business, only to lose money when prices went down more than fifty per cent.

The manufacturers who cannot afford the patent kiln, erect what is known in the native vernacular as "hanjas." That is, the moulded clay brick are arranged in the form of a square and fired. After the fire goes out, the brick are taken out. Under this system of firing, not more than fifty per cent. of the brick are merchantable, and of these not more than twenty-five per cent. are first class brick. But even so, in the towns and villages where time is no consideration and the purse has to be considered above all things, the "Hanja" system of brickmaking is often resorted to, and second and third class brick cost ten rupees per thousand to manufacture.

Messrs. Bum & Co., Martin & Co., and certain other European firms, exclusively. These brick are purchased by mills, factories, etc., at good prices. The moulders are all natives, only the manufacture is supervised by the Europeans, or Indians (natives) with engineering qualifications. But this makes a world of difference which the average Hindu brick manufacturer does not take into consideration.

MAKING POTTERY IN INDIA WITH PRISON LABOR.

AT FIRST GLANCE the readers of The Clay-Worker may think the workmen shown in the accompanying illustration are repairing a set of Ford tires, but not so. They are making pottery, not artistic or decorated ware, such as we think of here in this country as pottery, but the plain unadorned domestic ware which is utterly indispensable to the household of the natives of India. The artistic looking gentleman in the foreground is Lord Willingdon, Governor of Madras, and he is inspecting the prisoners in the Vizigapatam jail, which is the largest in that country of mysticism and poverty. There are over five thousand prisoners there, and a group of them as pictured using the improvised wooden wheel, which looks like an auto tire, with which to turn the pottery. The wheel is fastened to a block of wood on the ground with a large spike, which permits it to revolve freely. To be facetious we might remark, it is a potter's wheel without a kick.



Cincinnati's River Front and Sky Line, Viewed From the Kentucky Side.

OFFICIAL ANNOUNCEMENT



THIRTY-EIGHTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION TO BE HELD AT HOTEL GIBSON, CINCINNATI, OHIO, JANUARY 28 TO FEBRUARY 2, 1924.

BACK HOME TO CINCINNATI: Our birthplace is the preference of a large majority of our members as evidenced by the recent letter ballot and for that reason and others, good and sufficient, it has been decided to hold the Thirty-eighth Annual convention of the National Brick Manufacturers' Association in Cincinnati, Ohio, the week beginning Monday, January 28, 1924. The Association was organized in that city in September, 1886, and we have met there but once since then, our eighteenth annual convention in February, 1904. Twenty years is a long span, and surely it is time we were again meeting in the city of our birth

Reduced Railroad Rates.

Reduced railroad rates have been granted on the certificate plan by the Central Passenger Association and con-

curred in by the Southeastern Passenger Association, the Southwestern Passenger Association, the Trunk Line Association, the New England Passenger Association and the Eastern Canadian Passenger Association, which covers the entire territory between the Gulf and the Lakes and the Atlantic Coast and the Central West.

This provides for a fare and a half for the round trip, provided there are two hundred and fifty or more certificates, and if each member will take a certificate, there will be no trouble on that score. Certificates should be taken for each fare paid. There is no charge whatever for the certificates but they must be delivered to the secretary on arrival at Cincinnati to be vided by the railroad official there. Tickets may be purchased good going from January 24th to 30th, inclusive, and will be good returning out of Cincinnati up to and including February 6th, 1924. Members should arrange for their going tickets a few days in advance of their intended departure, to insure receipt of proper certificate. A mere receipt for fare paid is not sufficient.

Situated at the crossroads of the country's commerce, Cincinnati is easily reached by a number of important trunk lines; by electric railway, river, and by what is of particular importance to the autoist, a network of excellent highways radiating from Cincinnati to all points of the compass. At Cincinnati the Atlantic-Pacific Highway and the Dixie Highway converge, in addition to a number of others of lesser importance.

Cincinnati is recognized as the gateway to and from the South, and many years ago was termed by Longfellow, the "Queen City of the West." It has long been noted for its hospitality, culture, civic achievements and commercial and industrial enterprises. As a city, Cincinnati is unique in that it intermingles quaintness, romance, history, art, music



Convention Hall, Hotel Gibson, Cincinnati.

and the achievements of culture with aggressive commercial activity and gigantic industrial accomplishment.

Cincinnati is singularly fortunate in that it possesses so many things of interest to the tourist and the man or woman abreast of the times. Whether it is in the humming canyons of the business district or in the peaceful enjoyment of the magnificent vistas viewed from vantage points in the suburbs and parks, one cannot fail but be impressed by the diversity of appeals exercised by the city's many and varied interests.

The week of January 28th has been selected for our convention to enable the members who desire to do so to join the party booked to leave Chicago, Saturday of that week, February 2, for the annual convention of the Common Brick Manufacturers' Association at Los Angeles a week later. This will accommodate the members who desire to attend both conventions. Those attending the N. B. M. A. meeting at Cincinnati can if they wish leave Cincinnati Friday evening, spend Saturday in Chicago, and then join the happy throng on their way to the Pacific Coast. Those who do so will find the N. B. M. A. meeting at Cincinnati an inspiration for the continued consideration and discussion of the important problems of the industry.

Hotel Headquarters.

Hotel Gibson will be headquarters at Cincinnati, and be it said it is a splendid brick structure elegantly equipped for convention purposes. It has 900 guest rooms, each with a bath, either shower, tub, or combination tub and shower. The rates on the European plan range \$2.50 up per day for single rooms and from \$5.00 up per day for double rooms. Its splendid facilities insure every comfort and convenience possible for the entertainment of our members. No hotel in the nation offers better accommodations for our purpose. The convention hall is on the floor above the mezzanine floor. The latter looks down on the lobby. The floor above the convention hall, the first guest floor, will be reserved for the "trade missionaries," the machinery and supply dealers, and will afford them quarters unexcelled in any hotel in the land. Reservations on that floor will be made through Secretary Randall. Those desiring rooms for display or headquarters purposes will be accommodated at rates commensurate with the accommodations provided. The able manager, W. E. Hawk, promises to use every effort to insure satisfactory service to our entire membership.

The time, the place, and facilities are well chosen. Every brick and tile manufacturer in the land is earnestly invited to come and enjoy a week of business conferences and social pleasures, a rare combination.

Twenty years ago Cincinnati was a city of 300,000 people. Today its population is well over 500,000 and its attractions and places of amusement are innumerable. It affords a fine opportunity to study art in architecture, as many of its great buildings are models of fine brick work. The Glad Hand Committee will be more than pleased to guide the visitors to points of interest in and about the city.

Those desiring information on any phase of the brick industry are requested to advise with the Secretary, Theodore A. Randall, Indianapolis, who will endeavor to include same on the program which will be given in full subsequently. The requisite of membership in the National Association is an interest in the craft and a fee of \$10.00 per annum.

THE EXECUTIVE COMMITTEE,

RUFUS C. BURTON, President.

THEODORE A. RANDALL, Secretary.

Now they tell us that we have too much gold in this country and that is one of the things that hurt business. Well, it is better to be hurt with too much than with not enough.

THE KENTUCKY CLAY PRODUCTS ASSOCIATION TO HOLD ITS ANNUAL MEETING AT CINCINNATI ON TUESDAY, JANUARY 29, 1924.

INASMUCH as the National Brick Manufacturers Association is to hold its annual convention at Hotel Gibson in Cincinnati the week of January 28 to February 2, it has been decided to hold the annual meeting of the Kentucky Clay Products Association at the same time and place. So the call has gone forth to hold the annual Kentucky Clay Products Association Convention at Hotel Gibson in Cincinnati, Tuesday, January 29, 1924.

It has been a very active year with Kentucky clayworkers and the plants have not only been busy all summer but have been kept going later than usual this fall. Now some will go into winter quarters but others will keep going all through the winter.

In Louisville trade has been good, both for the manufacturers and for dealers. The Southern Brick & Tile Co. has had a busy year and has operated steadily to capacity. It is pretty much the same story with the West Point Brick & Lumber Co., at West Point, the Progress Press Brick Co., Louisville, and with the Coral Ridge Clay Products Co., with headquarters in Louisville and plant at Coral Ridge, Ky. The P. Bannon Pipe Co., too, has had a busy year in sewer pipe and hollow building tile.

W. P. Bannon, with his wife and two daughters and another lady, got mixed up in an auto crash recently; a truck driver crashed into his machine. Fortunately, however, there were only minor injuries and the excitement incident to the shock.

The dealers in Louisville, as well as the manufacturers, have had a good season too. W. E. Whaley has completed new exhibit rooms in the Marion E. Taylor building, and has been pushing brick aggressively all the year. Meantime the R. B. Tyler Co., who are pioneers in the dealer game in Louisville, have been doing their part, as has also the L. J. Bolster Co., the R. C. Tway Builders Supply Co. and the Louisville Builders Supply Co.

The indications are, too, that there will be more than the usual amount of winter work and that active building will start off with a boom against next spring. So it has not only been a good year in the brick trade in Louisville, but it looks like a better year ahead.

CONVENTION DATES.

January 12, 1924—Pacific Northwest Clayworkers' Association, University of Washington, Seattle, Wash. Secretary, Prof. Hewitt Wilson, University of Washington, Seattle, Wash.

January 28, 29, 30, 31, Feb. 1, 1924—National Brick Manufacturers' Association, Cincinnati, Ohio, Hotel Gibson. Secretary, Theo. A. Randall, 211 Hudson Street, Indianapolis, Ind.

January 29, 1924—Kentucky Clay Products Association, Hotel Gibson, Cincinnati, Ohio. Secretary, J. Crow Taylor, 642 S. 40th Street, Louisville, Ky.

February 11, 12, 13, 14, 15, 16, 1924—Common Brick Manufacturers' Association, Biltmore Hotel, Los Angeles, Calif. Secretary, Ralph P. Stoddard, Discount Building, Cleveland, Ohio.

February 13, 14, 1924—Canadian National Clay Products Association, Prince George Hotel, Toronto, Ont.

Announcement has not been made of definite convention dates for the National Paving Brick Manufacturers' Association, Hollow Building Tile Association, the Wisconsin Clay Products Association or the Illinois Clay Products Association.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Concentrates On Terra Cotta.

Dear Teddy:

As I wrote you some time since, our terra cotta business has been growing so fast we have concluded it is best to concentrate our efforts on that one branch of the business, so we have disposed of our brick plant, which, as you know, is entirely separate from the terra cotta department. The brick plant will be devoted largely to face brick, and will be owned and operated by Julius E. Uroman, Hoboken, New Jersey, and Dr. Willard B. Force, of New York City, who will do business under the firm name of the Corning Shale Brick Co.

We intend to enlarge our terra cotta plant and change the name to the Corning Terra Cotta Co. You know this is the day of specialties, and I feel that myself and my sons will find plenty to occupy our entire time and attention in that branch of the craft. I hope to be with you at the N. B. M. A. convention at Cincinnati, as usual, and to meet my host of old-time friends there and to garner the usual crop of trade lore to make a little easier the troublesome details of everyday work in the clay plant.

Yours cordially,

Corning, N. Y.

M. E. GREGORY.

Life of Dryer Cars in Waste Heat Dryers.

Editor The Clay-Worker:

In the November issue of The Clay-Worker there is published a letter from the pen of Mr. J. O. Trautwein, Chicago, Illinois, in which he expresses his views about certain conditions relating to waste heat dryers with a few pungent slaps at another type of dryer. He says: "An impression is being created that waste heat dryers shorten the life of dryer cars by unusual corrosion." This statement expresses a feeling or fear on his part that someone is spreading a wicked propaganda to make clayworkers believe something that is not true. The truth is, the impression he claims is being created, is a cold hard fact. No owner and user of waste heat dryers will deny it.

Because he read an advertisement that a certain kind of paint used on dryer cars used in waste heat dryers would prolong their life, the impression comes to him that this is a slam on the waste heat drying system which he has for sale. But to argue that cars used in waste heat dryers are not more rapidly destroyed than when used in any other type of dryer is useless and without effect. Everybody in the industry knows the effect of impurities in the drying atmosphere as drawn from cooling kilns that have been burned with coal. There is a long list of firms who sell waste heat dryers other than Trautwein and they all know about the excessive corrosion of cars in waste heat dryers. There is a much longer list of users of waste heat dryers and they all know about the loss of dryer cars by corrosion. We have

in our office the evidence in correspondence to show that the life of cars in waste heat dryers is from four to six years and in the same manner we know the life of cars used in other dryers is from fifteen to twenty-five years.

The statement, "There is no good reason why a waste heat dryer should corrode dryer cars any more than any other dryer, or even as much as any other dryer," is really badly warped because in the average clay plant it is not possible to wait until all the impurities are burned out of the furnaces before turning into dryer and wherever sulphur gas and other impure gases are drawn into the dryer there will be rapid destruction of cars and scumming of ware regardless of the expert engineering, correct circulation and proper handling of the dryer. Just bear in mind that one drop of black ink added to one gallon of pure water will change its color. Impurities in the air going into any waste heat dryer will have their dulling effect on the cars and ware. Remember, also, that it is not correctness of dryer design nor skill in operation that will prevent loss to cars and damage to ware, but the one vital thing—the elimination of all impurities from the drying atmosphere used.

According to this Trautwein letter, radiated heat dryers are more destructive to cars and equipment than the waste heat dryers, pointing out how the brick work cracks and opens up so the products of combustion and sulphur gas combine with the moisture in the tunnels to form an ingredient which is hard on all metal, especially steel. Operators of radiated heat dryers do not allow any such condition to exist even for a short time. Present-day brick work construction is such that expansion by heat has little or no effect in producing cracks in the furnaces or flues and should any occur they are soon mended.

Trautwein has a waste heat dryer only to sell and expects some of those who read his letter on the subject will become prospects and later buyers of his dryer.

I admit being the author, designer, inventor and patentee of several dryers which are now on the market and believe there is none more popular than the Justice Radiated Heat and the Justice Single Fan Waste Heat Dryers.

I. M. JUSTICE.

POTTERS' CLUB FORMED AT EAST LIVERPOOL.

MANAGERS AND SUPERINTENDENTS of the various pottery plants of the Western Ohio district, at a meeting in the headquarters of the United States Pottery Association, took initial steps recently to form a permanent organization.

Herbert Goodwin of the Atlas China Co., Niles, was elected president and Charles F. Goodwin, secretary and treasurer of the United States Pottery Association, secretary. About sixty departmental superintendents of the various plants in the East Liverpool district, together with representatives from Sebring, Crooksville, Niles and other places, were present.

Dr. A. V. Bleininger, chemist for the Homer Laughlin China Co., spoke briefly, touching on the benefits arising from such an organization. A committee of five members to be known as a council of five was named to arrange for another meeting, to be held Friday, December 14, in the Potters' Club. This committee includes Dr. A. V. Bleininger, Homer Laughlin China Co.; John Shingler, East Liverpool Pottery Co., Wellsville; M. J. Lynch, Knowles, Taylor & Knowles Pottery Co.; James Gilgallon, D. E. McNicol Pottery Co., and Samuel Eardley, French China Co., Sebring, Ohio.

A question box will be maintained at the Potters' Club,

which may be used by members of the association in submitting questions from time to time which will be taken up at the various meetings, to be held monthly. A name for the organization will be selected at the next gathering.

TEXAS BRICK COMPANIES CONSOLIDATED.

A recent consolidation of importance to the Texas trade is the merger of six companies of Ferris, Texas, into one large company under the name of the Ferris Brick Company, with headquarters at Ferris, Texas. The companies which were consolidated are The Diamond Press Brick Co., The Ferris Press Brick Co., the Kooken Press Brick Co., The Cole Press Brick Co., the Globe Press Brick Co., and the Lone Star Press Brick Co.

NEW BUILDING BRICK PLANT AT EAST ST. LOUIS.

ABOUT THE LAST WORD in plant construction is the new building brick plant of the H. & R. Mining Company at East St. Louis, Illinois, which has been built by W. H. Hill, of the Murphysboro Paving Brick Co., Murphysboro, Illinois, and Mr. Robinson, son-in-law of Mr. Hill. Marion W. Blair, superintendent of the Murphysboro plant, has been in charge of the construction work. The Minter system of kilns has been installed. Following his strenuous work of the summer, Mr. Blair took an enforced vacation and submitted to an operation which laid him up in the hospital for a couple of weeks, but is getting back on the job again with renewed vigor.

TOOTH OF GIANT ANIMAL FOUND AT BRICK PLANT.

What appears to be a relic of the pre-historic age when mastodons crawled upon the earth was unearthed by a workman at the yards of the Danville (Ill.) Brick Company recently.

The relic appears to be the tooth of one of those giant animals, and it is one foot in length and about five inches in diameter. At first it was thought that it was wood, but on closer examination it was declared to be of ivory composition, although it is somewhat undergoing a process of decomposition.

AT THE ILLINOIS SCHOOL FOR CLAY-WORKERS.

The short courses in clayworking and enameling which are to be held at the University of Illinois, January 14 to 25, offer exceptional opportunities to those interested in any of the many branches of the industries, to hear a corps of experts discuss topics of vital importance to all engaged in the manufacture or use of ceramic wares—whether they be brick, glass, pottery or enameled metals.

Twenty-one lecturers and assistants will assist in presenting thirty-three topics which include the properties of raw materials, processes of manufacture, and properties of the finished products.

The lectures are arranged so that the interests of those concerned with the manufacture of brick and other heavy clay products do not conflict with the special lectures for enamellers. The manufacturers of glass wares will find the discussions of refractories and many other topics well worth their attention.

The Short Course was given first in 1913. At first it was devoted primarily to the interests of clayworkers. In recent years the lectures have been arranged for the needs of others. For several years it was held annually, but since 1916 the sessions have been held once every two years. Since its inauguration, ten years ago, the Short Course has been held seven times and the total attendance has been 270 men, who have come from all parts of the country. In 1922,

twenty states were represented in an attendance of seventy-two men.

Who attends? An examination of the records shows owners of plants, superintendents, miners of clays, kiln burners, potters, enamellers, editors of technical journals, amateur potters, instructors, geologists, superintendents of glass plants, etc.

Programs may be had upon application to the Department of Ceramic Engineering, University of Illinois, Urbana, Ill.

IMPROVEMENTS FOR FLORIDA CHINA CLAY COMPANY.

THE FLORIDA CHINA CLAY CO., Leesburg, Florida, has expansion under way at its kaolin properties in this section for extensive increase in output, estimated to cost approximately \$75,000, including additional equipment for the introduction of improved mechanical processes in mining and handling the clay. A new electric power plant will be constructed to replace a present steam station, with the latter being retained as an auxiliary for furnishing steam for the drying rooms. The new plant will have a capacity of 600 h.p., divided into two units of 300 h.p. each. A new conveying belt system is being installed to replace the former truck service for handling the pressed clay cakes. The present plant has a daily production of about fifty to sixty tons, the bulk of output being used in the pottery centers, such as Trenton, New Jersey, and East Liverpool, Ohio. L. A. Morris, Macon, Georgia, for about twenty years connected with the Georgia Kaolin Co., has become associated with the Florida company, and will give active attention to plant operations.

MISSOURI COMPANY FOSTERS FRIENDLY RELATIONS WITH EMPLOYEES.

IN KEEPING WITH the policy of the Fulton Fire Brick Co., at Fulton, Missouri, to improve the conditions among its colored workers and their families, the company is one of the concerns of Fulton that has underwritten the fund to maintain a community nurse in Fulton. The city of Fulton and other civic organizations also will contribute to the fund. The Fulton Fire Brick Co., during the past several months, has inaugurated new and constructive ideas for the betterment of its workers in general and for closer and more sympathetic co-operation of all those connected with the plant, with the result that there has been much improvement in the friendly feeling between the employers and employes. A number of new homes were erected by the firm to provide places of residence for workers and the social features are being much stressed. The public nurse has been secured for a period of six months and the plan will be continued indefinitely if it proves a success during the trial period. Homes will be visited in all parts of the city and inspections in the schools also will be made regularly.

OBITUARY.

DEATH OF WILLIAM POST.

On November 20, William Post died at his home in East Williston, Long Island, N. Y., after several months illness. He was a brother of Jotham Post, first vice-president of the National Brick Manufacturers' Association, and they were associated together in the brick business from 1896 to 1914. A friend of many years paid a beautiful tribute to Mr. Post, from which we take the following lines:

"The life you lived seems God's ideal,
As He asks us all to live,
To give your best and always feel
That you are here to give."



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A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

FORTIETH YEAR OF PUBLICATION.

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ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 80. December, 1923. No. 6.

CURRENT COMMENT.

Merry Christmas and a Prosperous New Year.

* * *

Old 1923 was a very good year in the clay trades.

* * *

Let's make 1924 the biggest year yet in the production of brick and tile.

* * *

Surely the clay products industry can show a balance on the right side of the ledger this time.

* * *

The sewer pipe folks have had a splendid year all around and face the new year with prospects for an even greater volume of trade.

* * *

Another good thing about the inventory season this time is that we have staple values and no drastic writing down of buildings and equipment will be required.

* * *

French Lick may be a little difficult to get to, but it has become a sort of favorite meeting ground for the industry, and it is sure one good place to hold conventions.

* * *

Competition is showing its head a little now and promising to play a part in the coming year. Let us seek to tame it and make it friendly and co-operative instead of letting it run wild and do devilment.

* * *

One good bit of advice coming from Babson's Statistical Institution is for business men to trim costs as closely as possible and to narrow the profit margin some so that through

lower prices we may develop an even larger volume of trade the coming year.

* * *

Yes, we have made progress in face brick the past year, and the industry also has an aggressive organization that is helping the cause along.

* * *

A good New Year resolution for everybody to make is that they are going to get busy and hang out a lot of "Build with Brick" signs early in the year.

* * *

It has not been a banner year all around in farm drain tile because the farmers have been in the dumps part of the time, but the outlook is better now and there should be increased activity in the drain tile business during 1924.

* * *

There is an encouraging thought in the prediction that even if we do have a little slowing up in demand, with some slump in prices and wages during the new year, it will react to the benefit of the clayworking industry by leading to a greater percentage of brick building.

* * *

The clayworking industry is developing a number of distinct branches, but they are all members of the same family, and we should seek to retain a friendly family relationship and a disposition to help each other that we may keep free from that antagonism and dissension that begets trouble.

* * *

One of the oddities is found in the seeming lack of friendliness between the bricklayer contractor and the carpenter contractor, and one of the needs of the day is for more of the bricklaying fraternity to emulate the ways of the carpenter and take on more of the habits and knowledge of all-around contracting.

* * *

Good work has been done during the past year in developing simplification in sizes and standard tests. And while this good work continues, the new year is a good time also for the clayworking fraternity individually to resolve that it is going to stand by and live up to both the simplified practices as to dimensions and the specification requirements as to quality of products.

HUDSON RIVER SHIPMENTS.

According to the Dow Service Daily Bulletin Reports, the shipments of Hudson River brick this year, from January 1 to October 15, was 1,435 barge loads of 400,000 each. This is nearly 200 barges in excess of the shipments last year, and this, too, notwithstanding the reported inrush of brick imported from Holland and the making of what is termed synthetic brick of various composition.

BROADCASTING TILE BY RADIO.

The Hollow Building Tile Association has been springing a new one in the idea of broadcasting information and ideas about hollow building tile through radio stations. The association has made arrangements for three talks to be broadcasted by radio over Station WLAG, of Minneapolis, Minn., the first one taking place December 20, at 7:30 p. m.

This station is operated by the Northwest Farmstead and it is used for conducting educational talks every evening for the benefit of listeners. Naturally it opens an opportunity for the hollow tile folks which they were not slow to take advantage of.

This is a good work and there is more than a hint in it

to hollow tile folks everywhere and to other clay products people about opportunities to broadcast an interesting word of their products.

THE FALL SHOWING.

One of the cheering features of building activities during the fall months was in that they furnished a surprising increase in the work being done. According to the F. W. Dodge figures and estimates the fall building operations this year were about 25 per cent ahead of last year and activities continued fair in practically all parts of the country. This plainly means that the fall season demand for brick, hollow building tile and other clay products was of goodly volume, and as a result there should be no heavy surplus on hand. In fact, among the clay products plants visited recently there is noticeable a considerable thinning down of stock almost everywhere, which speaks well both for winter activity and for busy times early next spring.

MOTOR TRUCKS AND RAILROADS.

The motor trucks have made such conspicuous showing the past few years in the movement of local and short-haul freight that trucking and its relation to railroads and other forms of transportation has been made the subject of study and a special report on the part of a committee of the Chamber of Commerce of the United States. A study of this report will furnish some interesting light not only on the progress of motor trucking where there are suitable roads, but it will suggest many future possibilities of delivery of brick and other clay products by motor trucks, especially on hauls ranging up to fifty miles. As has been suggested in these columns heretofore, a cultivating of the nearby trade on the basis of local delivery by motor truck will not only help solve the transportation problem, but it will mean more business closer home and less ruinous competition in the distant fields. It is a subject meriting special attention this winter and every clay products man may well get a copy of the pamphlet report of Committee IV on The Relation of Highways and Motor Transport to Other Transportation Agencies and make a study of it to get the enlightenment it gives.

SOME BRICK RETESTS.

Owing to some criticism of the manner of making transverse tests for the modulus of rupture determination on brick, some retests were made at the testing laboratory at the Department of Public Works at Philadelphia with special apparatus after designs by Professor T. R. Lawson, chairman of Committee C-3 of The American Society for Testing Materials. Meantime, Subcommittee X of Committee C-3 sent out questionnaire pertaining to the revision of test methods. The report of tests and the apparatus designed after the plans of Professor Lawson says:

"It consists essentially of two cast iron base blocks connected by a rod. Each base block is surmounted by cast iron by tetrahedron. The lower edge of the tetrahedron, in contact with the block, is slightly curved along its length in order to give free motion for adjustment of the upper edge to any slight warping of the brick specimen. This support has proven excellent and is much superior to the wooden block support outlined in the standard method."

Then, follows details of how the series of tests were carried out and in connection with tabulated data, the work is summarized as follows:

"As for the conclusions to be drawn from the results,

there is nothing definite or positive indicated, other than that there does not seem to be any difference in the results, whether or not the standard plates specified are used between the knife edges and the specimen. However, when no plates were used on the knife edges, in five (5) cases out of one hundred forty-seven (147) by this method, there was shear in the brick at the end support, but in these cases the individual values compared favorably with the results obtained when the brick broke in the middle.

"It is desired to acknowledge the kindness of Mr. W. C. Perkins, engineer of the Eastern Paving Brick Manufacturers' Association, in arranging for the brick sent to this laboratory and also the kindness of the Metropolitan Paving Brick Company, Mack Manufacturing Company, Sterling Brick Company and the Patton Clay Manufacturing Company in contributing the brick."

WHY THE COST SUBJECT PERSISTS.

One reason why the subject of cost and cost accounting stays with us as a live issue even though it seemingly has been worn threadbare is that cost accounting is one of the everyday essentials in business. Still another good reason is that conditions and costs change not only from year to year but almost from month to month, so that cost facts and figures of last year will not serve this year's needs. So the subject of cost and cost accounting persists because costs are always with us and in the present condition of affairs they are persistently changing, making an everyday need to keep in close touch with them and to keep seeking for the most effective means that can be made uniform and widely applied.

COUNTY FAIR WORK.

The California Common Brick Manufacturers' Association, with headquarters at 352 Douglas boulevard, Los Angeles, has been carrying out one of the good ideas that The Clay-Worker has been boosting for for several years now. That good idea is the making of clay products displays at county fairs. This live-wire organization in the brick trade reports good showings at Fresno and at Santa Ana. Gradually, too, there is awakening to an interest on the part of other sections of the country in displays at fairs and at better homes expositions. The Louisville Brick Club made a splendid group display at the Greater Homes Exposition in Louisville during the fall, and the Southern Brick & Tile also made an individual display, and so it goes, from different sections of the country come cheering reports of putting clay products on display at gatherings of farmers and at home shows and these things help sell the public on better construction.

GOOD PAVING BRICK FACTS.

There was brought out in a recent issue of Dependable Highways, the official bulletin of the National Paving Brick Manufacturers' Association, some splendid and worth-while facts about paving brick that every manufacturer should figuratively paste in his hat and keep on tap for use when there are arguments up about the relative merits of different kinds of paving.

The first fact of importance is that a brick paved street or highway will outlast the bonds issued to carry on the work. That is something that can not always be said of other types of highway construction.

And it is a fact which was brought out in connection with a conversation with a judicial citizen of an Ohio city which had brick paved streets that had been down for thirty-three years.

The other important fact brought out was that the brick

paved highway does not require any of those familiar signs which refuse to permit solid tire and heavy trucks on certain boulevards and asphalt surfaced streets. Streets are made to be used both for freight traffic and for passenger traffic, and when the street is paved with brick it may be used by all without discrimination. This is another important fact, the brick paved street or road will stand up under hard service as well as furnish a smooth clean way for light traffic.

INDIANA HIGH SCHOOL BOYS TO LAY BRICK FOR NEW BUILDING.

The superintendent of schools at Evansville, Ind., has under consideration a proposition to have the boys of Central High School, who have had instruction in bricklaying while in the grades, assisted by the part-time vocational boys, erect a two-story building to house the shops, the noise from which now disturbs the rest of the school. About a year ago colored boys who had been in the building classes put up a \$19,000 building under the direction of the instructor.

CHANGE OF ADDRESS.

The Bertha-Consumers Company of Pittsburgh, Pa., announces that the post office address of Elsie Mines No. 1, 2 and 3, formerly known as Dalna, Ky., has been changed to Elsiecoal, Ky. The post office address of Elsie No. 4 at Blackey, Ky., remains unchanged. Through the courtesy of the Louisville & Nashville Railroad, the railroad billing stations have been changed as follows: Dalna, Ky., changed to Elsiecoal, Ky.; Smoot, Ky., changed to Elsie No. 1, Ky.; Wevaken, Ky., changed to Elsie No. 2, Ky., and Woodrock, Ky., changed to Elsie No. 4, Ky.

A PAGE FROM THE BOOK OF SMILES.

One of the most seasonable things in the current Book of Smiles is the editor's advice to the young man who writes: "I am in love with a girl, and I have not heard from her for three weeks. What shall I do?" Answer: "Lie low until after Christmas."

The same page has a mile of smiles, while a preceding page affords a serious thought and bears the season's greetings of the Standard Dry Kiln Company. It reads:

"We are glad it is Christmas time—because, it enables us to send sincere greetings to our many friends, and to thank them for their continued confidence in us as shown by the fact that another year has outstripped its predecessor in amount of business done."

For copy of "Book of Smiles," address above company, 1547 McCarty Street, Indianapolis, Indiana.

SCHOFIELD-BURKETT EXCAVATOR.

UNDER THE ABOVE TITLE the Schofield-Burkett Construction Co., Macon, Ga., has issued an interesting and well illustrated catalogue of their excavator, which demonstrates quite effectively that it is a most economical device for digging and loading all sort of earthy material, such as clay, shale, sand, gravel, and particularly any quantity of stripping, with one operation with from one to three men, depending on the quantity and character of material handled. They show two illustrations of particular interest to brick and tile manufacturers. The photos were taken at the plant of the Cleveland Builders' Supply & Brick Co., Cleveland, O., where one Schofield-Burkett excavator was installed, displacing two steam shovels. In that instance the machine is supplying clay enough to make 300,000 brick a day, and at that is only operated about half the time with two men, the engineer and the man in the field to signal the engineer when to start and

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WANTED.

Position as business manager or plant superintendent. Familiar with every detail of the work. Many years' experience in operating and managing brick and tile plants. For the last ten years connected with one of Ohio's best plants. Would not be adverse to acquiring an interest in a plant under favorable conditions. Address

LEMUEL,

12 tf d

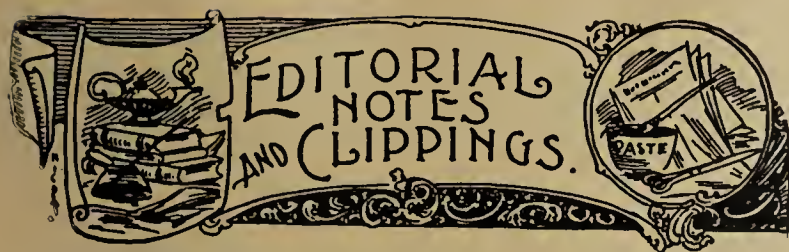
Care The Clay-Worker.

stop. There are other equally convincing illustrations in the catalogue, which will be sent to any reader of The Clay-Worker upon application. See their ad on Page 536. A feature of much interest is the fact that the Schofield-Burkett excavator can be operated by a laborer and repaired by any country blacksmith when repairs are needed, which is but seldom.

LIST OF INDUSTRIAL HEATING INSTALLATIONS.

AN EIGHT page booklet, Special Publication No. 1667, containing a list of over 300 successful installations of Westinghouse industrial heating apparatus has been issued by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. The list, although containing only the more important installations and omitting, therefore, a great many of considerable interest, is impressive because it gives a definite idea of the extent to which electricity is being used for industrial heating purposes and shows that electricity is not simply the fuel of the future, as is often supposed.

A few of the industries making use of electric heat are manufacturers of abrasives, manufacturers of airplanes, brick plants, bakeries, furniture factories, foundries, hospitals, railway companies, restaurants and cafeterias, rubber mills, steel mills, textile machinery manufacturers, textile mills, tool manufacturers and wire mills.



The B. Mifflin Hood Brick Co., of Atlanta, Georgia, has increased its capital from \$50,000 to \$100,000.

A. J. Boyd has purchased the plant of the Fairfield (Iowa) Brick & Tile Co., and will put same in shape for operation.

The Fairfield Brick Co., of Zoarville, Ohio, has been incorporated by J. W. Buchler, P. G. Buchler, A. Limbach and others.

The plant of the Willetts Clay Products Co., of Fairmont, West Virginia, which was recently destroyed by fire, will be rebuilt at once.

The Acme Brick Co., with head office at Danville, Illinois, and plant at Cayuga, Indiana, recently increased its capital stock from \$40,000 to \$100,000.

W. H. Allen, of Elizabethtown, Tennessee, has leased a tract of ground at Marion, Tennessee, on which he will erect a large building brick plant with 50,000 daily capacity.

The Puritan Brick Co., of Aberdeen, Maryland, has been incorporated with a capital of \$225,000 and with the following incorporators: George Hays Mitchell, Franklin Alfred White and others.

A. E. Venable, H. O. Ramsey, H. D. Justice, W. Y. Boswell and S. N. Oakley have organized the Cardiff Brick & Tile Manufacturing Co. of Oakdale, Morgan County, Tennessee. The company is capitalized at \$25,000.

The Continental Clay Products Co. has been incorporated at Martinsburg, West Virginia, by E. Taylor Chewing and Robert W. Williams, both of Martinsburg, and Frank B. Ober, of the Title Building, Baltimore, Maryland.

Thomas W. Pierce, of Boston, Massachusetts, was stricken with heart failure while horseback riding November 22 and died instantly. Mr. Pierce was a director of the Fiske Brick Co., the Darlington Clay Products Co. and the Ridgeway Brick Co.

The Zwermann Pottery at Robinson, Illinois, will increase the capacity of the plant by adding another kiln. The business of the company has increased rapidly in the last two years. The company is installing a sprinkling system as a protection against fire.

The Welsh Refractories Co., Lancaster, Pennsylvania, has arranged for an increase in capital from \$350,000 to \$1,500,000 for general increase in production. It is understood that plans are under consideration for early expansion in present plant and operating facilities.

Fire recently at the plant of the Boulevard Brick Co., Philadelphia, Pennsylvania, caused a loss estimated at about \$12,000. The damage largely was in the kilns at the works and will be replaced at an early date. A portion of the storage plant was also partially destroyed.

The Concord (N. H.) Brick Co. has been incorporated for the purpose of manufacturing brick and other clay products. Work on the plant will start at once. The officers of the new corporation are Arthur W. Stevens, president; P. R. Sanders, secretary, and Ervin W. Porter, treasurer.

The Bigelow Clay Products Co. is building a new plant at Pontiac, Michigan, for the manufacture of brick and hollow tile. The Bonnot Company of Canton, Ohio, is installing

the machinery. St. Clair Couzens, president; A. G. Nichol, vice-president, and R. M. Spindler, secretary and treasurer.

The Carter County Brick Corporation has been incorporated with \$500,000, by M. L. Rogers and others at Wilmington, Delaware.

Fire of unknown origin caused \$20,000 damage to the Consolidated Clay Products Co. at Corning, near New Lexington, Ohio, recently.

The Clermont Land Corporation of Roanoke, Virginia, is contemplating the establishment of a brick and tile plant and is inviting prices on machinery.

The McNeill Milling Co. of Fayetteville, North Carolina, which is planning to double the capacity of its ice plant, also is contemplating the construction of a brick plant.

George Little has opened a brick plant at Ponca City, Oklahoma, that will have a capacity of 10,000 brick a day. The plant is capable of turning out plain, face or ornamental bricks and concrete blocks.

The United Clay Products Co., of Martinsburg, West Virginia, has been incorporated with a capital of \$50,000, with Clyde E. Miller, of Washington, D. C., and W. Crosdale Witts of Martinsburg as incorporators.

The Elk River Clay Products Corporation has been organized at North East, Maryland, with \$210,000 capital stock. The company has ninety-two acres of land on which they will erect a plant for the manufacture of brick.

The Williamston (Mich.) Clay Products Co. has been formed by J. E. Meyer, with George F. Skelton and John N. Meyer, of Mt. Clemens. Brick and tile will be made. A spur track from the Pere Marquette Railroad to the plant will be built.

The Louisiana Brick Manufacturing Co. is being organized at Monroe, Louisiana, to build an immense plant for the manufacture of brick and other clay products. The company has secured a large deposit of valuable clay which has been tested with good results.

The plant of the Defiance Clay Products Co., at Defiance, Ohio, was damaged \$22,000 by fire which broke out first in the machine room, and a little later in a cattle barn, some distance away. Six head of cattle and two horses were burned. The plant will be rebuilt.

Application has been made to the Governor of Pennsylvania by H. E. Montgomery, Frank Atkins, G. C. Ferguson, John W. Rhodes, Mark H. Snyder and Samuel W. Snyder. Charter for intended corporation to be called Northern-Kittanning Brick Co., located at Kittanning, Pennsylvania.

The Mid-Continent Brick & Tile Company, of Tulsa, Oklahoma, is operating to full capacity, turning out 60,000 brick per day. The plant is located at Sand Springs and has been in operation for five years. A. Maile is president, J. H. Sessing, treasurer, and O. Pinson, secretary of the company.

The Cunningham Brick Co., of Lexington, North Carolina, of which I. H. Cunningham of Greensboro, North Carolina, is president, has acquired 148 acres of land between Gordontown and Hannersville and will erect a shale brick manufacturing plant. The plant will have an output of 30,000 brick a day.

The property of the Verplanck Brick Co. Beacon, N. Y., containing about 160 acres, including clay and sand deposits, kiln sheds, houses, etc., together with 1,100 feet of frontage on the Hudson River, with dockage and riparian rights, has been sold to Walter C. Talbot, Mortimer Brockway and Dr. Charles V. Keating, who will establish a modern brick plant.

(Continued on page 592)

PRODUCERS

Here is "Producer and Saver" No. 384 of The American Line. It is fully covered by patents and when you install it you get protection as well as "production."

The American No. 384 Grinder is "Producing" 400 tons of Hard Shale ground for the Pug Mill in a day. This is the record of the Salt Lake Pressed Brick Co., Salt Lake City, Utah.

When it comes to saving, J. B. Cahoon, Manager, says: "We have eliminated ten men. It easily does the work of four nine-foot pans on one-fourth the power. We save a lot of grief and in a year have needed no repairs."

Truly this *is* a "Producer and Saver."

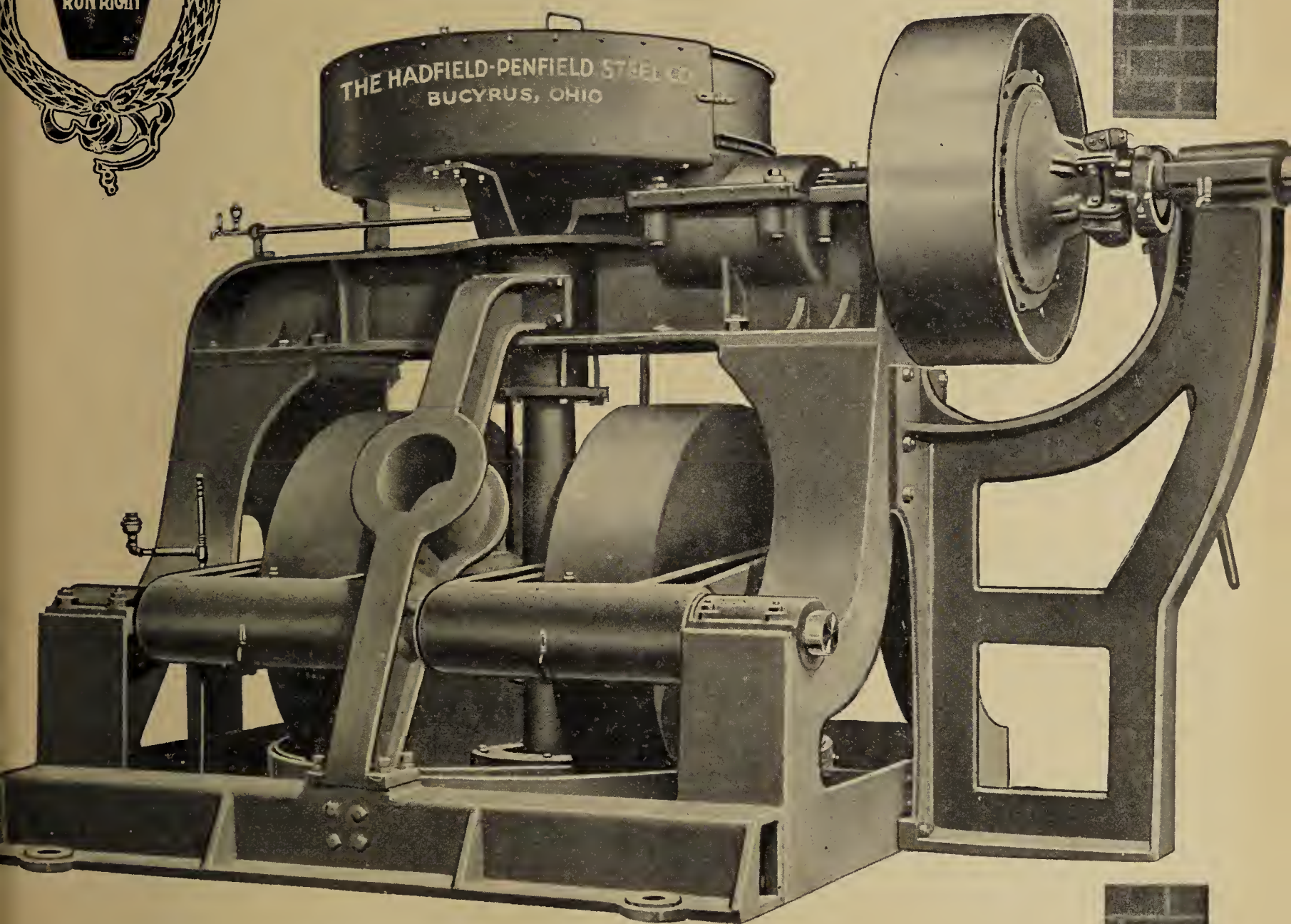
The Salt Lake experience is only one of a number. We will be pleased to give you any information you may desire on this "Producer and Saver." It can't help but pay for itself in your plant if you use two or more pans.

The American No. 384 Grinder is in a class by itself.

Write us regarding this or any of our long line of "Producers and Savers" for Clay Plants.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio
Builders of the "American Line"

AND SAVERS



PRODUCER AND SAVER NO. 384 (Patented).

EDITORIAL NOTES AND CLIPPINGS—Continued.

This property has been in the Verplanck family since the original grant from King James of England in the seventeenth century.

Carl B. Harrop, builder of the Harrop kiln, Columbus, Ohio, recently closed a contract with the Champion Porcelain Co., of Detroit, Michigan, for a Harrop Car Tunnel Kiln to be used for firing high temperature spark plug porcelains. This makes the twelfth kiln Mr. Harrop has sold since November 1, 1922.

The Regent Tile Co., New York, N. Y., has been formed under state laws with a capital of 100 shares of stock, no par value, to manufacture tile and kindred ceramic products. The new company is headed by S. Caspert and M. Merolla. It is represented by Nelson Ruttenberg, an attorney, 250 West Fifty-seventh Street, New York.

The Puritan Brick Co., Aberdeen, Maryland, has been organized under state laws with capital of \$225,000, to operate a plant in this section for the manufacture of common brick. Arrangements will be consummated at an early date. The new company is headed by George Hays Mitchell, Franklin A. White and John H. Burgess, all of Aberdeen.

George C. Landis, president of the New Cumberland Brick Co., New Cumberland, Pennsylvania, died November 19 at his local residence at 705 Third Street, age 56 years. He is survived by his widow, two sons and two daughters. Mr. Landis was a member of the Robert Burns Lodge 464, Free and Accepted Masons, and prominently connected with the Baughman Memorial Methodist Church.

The Sugarcreek Clay Products Company's brick works just east of Sugarcreek, has been sold to a syndicate of Dover (Ohio) men who took possession December 1. The purchase price was \$200,000. The group is headed by H. A. Reiker, J. G. Hammond, F. M. Hammond and Thomas Kemp, the latter a prominent brick manufacturer. The firm will be incorporated for \$250,000 under the name of The Sugarcreek Brick Co.

Johnson Clayworks, Inc., of Ft. Dodge, Iowa, is the new name of the company which recently incorporated for \$600,000 paid-up capital to succeed Johnson Brothers Clayworks, Iowa. D. G. Johnson is president of the company, William Johnson, vice-president, and E. J. Halligan, secretary and treasurer. The plant at Clayworks, four miles south of Ft. Dodge, will be conducted on the same lines that have brought it success within the past years, only the incorporation and enlargement will enable them to branch out on a wider scale. While there have been many improvements made in the past year, still more will be made in the months to come in order that the output may keep step with the fast-growing business.

The Valley Cities Brick Co., recently incorporated at Youngstown, Ohio, with a capital of \$250,000, and owning forty acres of clay and coal land at West Austintown, announces that as soon as possible after the opening of the year it will start construction of its plant there. Six kilns with a capacity of 1,000,000 bricks monthly will be erected at the start. The company says it will later increase its capacity to 2,500,000 brick monthly. Contractors and builders in the valley towns are said to be important stockholders in the company, insuring a market for the product in this territory. Jacob Rahn, an experienced brick manufacturer, will be general manager of production. He is now with the Alliance (Ohio) Brick Co. Officers of the company are David G. Jenkins, vice-president; H. J. Williams, chair-

man of the executive committee; Milton E. Coombs, secretary and director of sales; N. T. Hurd, treasurer and auditor; Frank G. Silver and general manager of production, Jacob Rahn.

The Frederickson Floor & Wall Tile Co., Independence, Missouri, a Delaware corporation, has arranged for an increase in capital from \$475,000 to \$1,225,000, for general increase in operations. The company is said to be arranging for additional plant facilities to provide for current and heavy incoming business.

A rumor is current that the International Bricklayers' Union, which now has a large brickmaking plant at El Paso, Texas, now has under contemplation the erection of an immense brick plant either at Fort Worth, Dallas or Houston. One million dollars for this purpose was voted at the last meeting of the International Bricklayers' Association.

The North Missouri Fire Clay Products Co. has been incorporated at Mexico, Missouri, with a capital of \$30,000 and will mine clay, fire clay and coal, and will manufacture and sell all kinds of clay and fire clay products and coal. The incorporators are J. W. Gallaher, T. J. Hoxsey, R. R. Buckner, F. P. Lye, J. E. Streif, R. S. Nichols and H. D. Shrout.

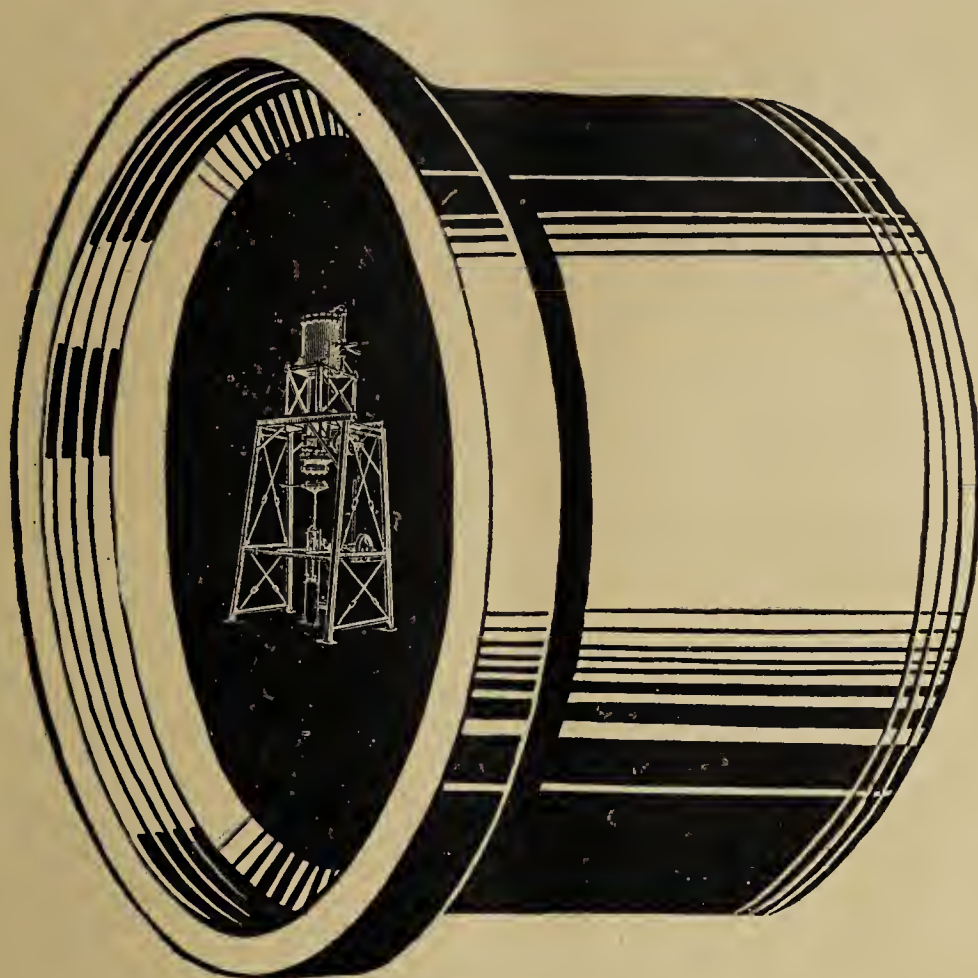
Nin McQuillan, vice-president of the Harbison-Walker Refractories Co., and L. C. Morganroth, head of the real estate department of the same corporation, visited in Montgomery City, Missouri, recently to look over the field, relative to the location of a plant in that city. If they locate in Montgomery City they will construct a plant that will cost in excess of \$500,000 and will employ 200 men.

W. G. Bush & Co., Nashville, Tenn., report brick manufacturing active. They say that the demand for both common and face brick is very strong. No change in prices has been made recently, nor is any contemplated. The Nashville manufacturers are able to care for the local requirements for both common and face brick, and in addition ship ten to fifteen cars per day to territory trade. Outlook for fall business is extremely good. There are a large number of new jobs coming up which will require many million brick. There is a growing demand for both common and face brick.

Charles L. Jackson has been placed in charge of the development plans of the Silicon Products Corporation of Philadelphia, Pennsylvania, which has under consideration large development of clayworking products at Tredegar, Alabama. The company will construct a large reduction mill and silicon brick plant. The Hadfield-Penfield Steel Co., of Bucyrus, Ohio, will install the brickmaking machinery and the James Ore Concentrator Co. of Newark, New Jersey, will have charge of the mill construction. The Alabama Power Company will supply the power and the company plans to install an electric steam plant. James and Breckler of Louisville, Kentucky, will have charge of the chemical control of the products of the company.

THE STRENGTH OF CONCRETE.

THE ENGINEERING EXPERIMENT STATION of the University of Illinois, at Urbana, has issued quite an elaborate pamphlet as bulletin No. 137, the subject being the strength of concrete, its relation to the cement aggregate and water, by Arthur N. Talbot and Frank E. Richart. The report goes into the problem very thoroughly, dealing with both the material composition of concrete, the water factor and methods of testing as well as the results of elaborate tests. It is a splendid reference work on concrete.



**As surely as day follows night
a vision of Stevenson Equipment
follows the sight of perfect pipe**

*Superior Equipment for Quality
and Quantity Production*

The Stevenson Company

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

Written for The Clay-Worker:

THE CHICAGO SITUATION.

WITH A DELIGHTFUL open autumn and other favorable conditions characterizing its closing months, the year 1923 appears certain to set up the best building record for the City of Chicago since before the war. This comparison applies to the number of building projects for which official permits have been taken out. In point of cost, or calculated cost of these projects, the total for this year probably will far exceed that for any previous year, with the possible exception of the year the permit was issued for the huge new Union Railway station.

For the past four weeks the number of activities for which permits have been issued by the Building Commissioner have run, respectively: 341, as compared with 325 for the corresponding week of 1922; 436, as compared with 279, same period of 1922; 303, as against 259, and 355 for the week ending December 8, 1923, in comparison with 296 for the corresponding week of December a year ago. In point of estimated costs, the record runs thus: \$6,746,950, as against \$5,800,750; \$5,344,750, as against \$4,256,450; \$6,161,350 as compared with only \$3,983,100; but only \$4,957,200 in contrast with \$6,826,300, some very large enterprises figuring in the smaller number of permits for this week of 1922.

One of the biggest of the newly-announced downtown projects is the ambitious plan of the Iroquois Club, Chicago's historic and active Democratic social organization, for its own home, probably at the southwest corner of East Lake street and Michigan avenue. The plans prepared by Jarvis Hunt call for a twenty-one-story building which will harmonize with the other architectural giants of the modern "Boul Mich" by boasting a tower after the fashion of the Wrigley Building and the Tribune Building now under construction, to say nothing of the new First Methodist Church building christened the Chicago Temple building, which stands over at the southeast corner of Clark and Washington streets. The corresponding Republican organization—the Hamilton Club of Chicago—has had such success with its club house that the Iroquois Club believes that it can serve an equally useful field in Democratic circles and extend its influence until it is nation-wide, and it has a membership of 4,000 (the present membership is 400) to support its new \$3,500,000 edifice. The new club house is expected to be the Democratic center for the city, county, state and as much of the party's national activity as can be induced to come to Chicago. The first floor, as in most buildings of the sort, will be given over to shops as a practical revenue measure. The second and third floors will be used for a lounge two stories in height. Next will come a floor devoted to the uses of the Democratic women, with a women's dining room, and above that a main dining room floor, which also will be two stories in height. Above this, the floors will be used for sleeping rooms, offices of various Democratic organizations and party officials, and probably a number of conference and moderate-sized convention halls.

Another new downtown building enterprise just announced, work upon which is scheduled to start on May 1, is the \$1,000,000 "department store for home furnishings," to be erected by the Palmer estate at the northwest corner of East Adams street and South Wabash avenue, for the Hartman Furniture and Carpet Company. This company has entered into contract to lease the entire building for a period of twenty-five years. The building will cover an area of 120x100 feet, be twelve stories in height and among other space divisions will contain 100 model rooms furnished with household goods and decorations suited to every size of family wallet. It is said that it will be the largest store of the kind in Chicago, if not in the country.

The largest moving picture theater north of the Loop district, excepting the one to be erected on the site of the now defunct Green Mill Gardens, is to hold an imposing position on the east side of Sheridan road, about 250 feet north of Devon avenue. It is to involve an investment of approximately \$300,000 and is likely to prove one of the finest monuments to the worth and beauty of architectural terra cotta in Chicago. Not only the Sheridan road front will make its ornamental appeal in terra cotta, but Meyer S. and Louis L.

Marks (already the owners and operators of three other considerable movie houses realizing that the east wall of their latest venture will constitute a new and conspicuous landmark from the campus of Loyola University, have given instructions that this facade also is to be of the same artistic material. It is another example of Chicago builders falling more and more into line with the "Chicago Beautiful" idea. This theater, with its entrance at the south end of the Sheridan road frontage, will have a 200-foot lobby—the longest in town, stretching across the back of an auditorium which, according to the owners, will seat about 4,400 people. The stage will be at the north end of the building and will be large enough to accommodate any sort of a production. On the Sheridan road side the building will be three stories high with foundations sufficient to carry five additional stories. It is the plan to have stores on the first floor and ultimately shops on the upper stories.

Meantime, residential building is going ahead respectably with apartment construction apparently somewhat on the increase over the past few years. Randolph W. Matteson is said to be planning the erection, at a cost of \$1,000,000, of six flat buildings, each to contain thirty apartments of two, three and four rooms, on a site which he has recently purchased on the west side of North Spaulding avenue near Wrightwood avenue.

A piece of vacant property 150x125, acquired by Samuel and Joseph Handelsman at 1332 South Harding avenue, is to be improved by a \$200,000 thirty-apartment building, to be completed about May 1, it is announced. A nineteen-flat building at the southwest corner of West Adams street and Kilbourne avenue is to be erected at a reported cost of \$100,000. An eleven-story apartment building containing three, four and five-room flats is to be constructed for the Dearborn Lodge Corporation at 1349 North Dearborn street.

Something new in the bachelor hotel line is planned by H. P. Lynch, proprietor of the Sherwil bachelor hotel at Sheridan road and Wilson avenue, which has been exclusively patronized by men, believes that the bachelor women of Chicago are entitled to equal consideration, and is reported to be preparing for the construction of a four-story hotel for their exclusive use, to be completed about May 1, and to cost in the neighborhood of \$125,000. It will have seventy-five guest rooms, a reception room, a lounge and reading room with a fireplace, breakfast room, gymnasium and swimming pool.

The First Baptist Church, in East Fiftieth street between Drexel boulevard and Ellis Avenue, has caused work to be started on a \$100,000 two-story community house and bible school.

The Meyercord Company, makers of decalomania transfers for window signs and the like, has awarded contracts for a \$200,000 annex to its plant at 5338 West Lake street.

Shortly after January 1, work will be started on an attractive home in tapestry brick for the Lafayette Council of the Knights of Columbus at the northeast corner of Fullerton and Fairfield avenues. The building will be three stories high and will cost about \$350,000. Four stores and a billiard room will occupy the first floor; a large ball room with a completely equipped stage, the second; a large lodge hall with adjoining smaller rooms for lodge uses and a small banquet hall, the third. In the basement will be a large gymnasium, locker and shower rooms, handball court and bowling alleys.

One of the attractive new downtown skyscrapers now nearing completion is the Burnham building at the northwest corner of LaSalle and Randolph streets. It will be one more light complexion of considerable area daring to show itself in defiance of Chicago's well-known soot. Above the first six stories there is a large court opening on the LaSalle street side, thus adding to the amount of desirable outside office space. Clay products predominate in the attractive features of this building. The terra cotta work is supplied by the Northwestern Terra Cotta Company. The Illinois Brick Company furnishes the common brick and hollow tile. The face brick is to the credit of the Thomas Moulding Company.

There are only indications of rather general building of apartments, business and industrial structures throughout the city. The old year has given a good account of itself and building material men hope for as good or better from 1924.

SCRIP.



keep your' brick yard running right along this winter!

In any industry, a plant which works only seven or eight months in the year is certainly not being conducted upon economical lines.

Taxes, insurance, depreciation, officers' salaries and expense of clerical help go right along whether the plant is in operation or idle.

* * *

The old idea was that the plant could not be operated owing to many "ifs" but that is all changed now for there is available to every Brick Manufacturer the following "if" eliminators:

The AutoBrik Machine

The Martin Lancaster Steam Pipe Rack
Brick Dryer

AutoBrik Clay Storage System

Yards with these labor and time savers can laugh at the idea of closing down during three or four winter months.

AutoBrik Engineers will be glad to assist and co-operate with manufacturers who have a real desire to work twelve months in the year. These Engineers have a working knowledge and an experience in Brick making which is extremely valuable.

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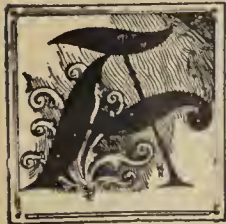
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MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



AFTER ONE OF THE biggest and best sustained building seasons in the history of Milwaukee, construction work on a large scale has begun subsiding for the winter months. Valiant efforts to further prolong the longest building season ever experienced by local brick men are being made by various interests and are meeting with

fair success, but the leaders of the local brick industry are generally agreed that the big boom is temporarily past. With the majority of the orders coming in at the present time being for smaller jobs, executives of brick yards and jobbing establishments are beginning to come up for air, and to exchange notes about the extraordinary season's activity.

Many reasons are advanced for the late arrival of the seasonal slackening up of the building materials industry, the growth and development of the city being conceded to be a powerful factor in bringing about the unusual situation. However, the opinion of local brick men, in common with leaders in other building supplies industries, is to the effect that the ever increasing efforts being put forth by the building trades to bring about a twelve-month building season, is directly responsible for the nearness with which that goal is being approached. Milwaukee brick men have set an example that is a great credit to their far-sightedness and progressiveness in the way they have responded to the movement for more sustained building activity. Large real estate concerns doing much building have been educated to the fact that it will be for the greatest good of themselves as well as of the builders and supply men, if as much work as possible is undertaken as late as possible in the season. The general spirit of "obeying that impulse" and putting a project across when the time is best suited for making a success of financing it and for filling a need, instead of waiting for the traditionally "right" season to roll around, has resulted in the realization of many imposing structures that would otherwise perhaps have been postponed to an ignominious failure.

Because the building season this year, although unusually successful, was a healthy, natural development of hard propaganda work on the part of building supply men in general, the prevailing outlook for the future is a most optimistic one. It is generally expected that with the first signs of spring the boom will again be on. Brick men point to the many antiquated structures in the city, and the great need for new business and residential quarters, as indications of what great opportunities the future holds in store for them. They are particularly pleased by the ever increasing tendency to use brick as a building material, and are beginning preparations for next year with a great deal of enthusiasm.

Figures submitted by William D. Harper, Milwaukee building inspector, show that November, like the preceding ten months of 1923, showed healthy increases over the corresponding month of last year. A significant fact for the brick industry is the fact that in general the number of permits

issued month by month this year was less than during the same period a year ago, but that the amount of money involved in the structures erected, represented a substantial increase over last year's amounts. This shows that most of the buildings being erected are of a larger size than formerly, and for that reason brick and clay product building supplies are to be used instead of lumber. Frame houses, even among smaller buildings, are beginning to be a thing of the past, very few frame construction jobs having been undertaken lately.

The November report of the building inspector includes the entire month up to the 30th, and shows that 2,801 permits were issued during that period, as compared with 3,060 issued in November, 1922. The amount involved in the permits issued during the past month, however, was \$2,976,542, compared with only \$2,567,104 during the same period last year, or roughly a 15 per cent increase. During the last week included in the report for November, 519 permits were issued, against 633 during the same week last year, but the cost of the buildings was \$582,170, compared with only \$462,514 in 1922. During the year ending November 29, a total of 36,267 permits were issued, according to the report, while in the preceding year only 33,942 permits were issued. Buildings on which permits were issued during the past year cost \$38,549,927, compared with only \$29,056,747 in the preceding twelve months.

Harrison P. Spaulding, owner of the H. P. Spaulding Fire Brick Co., Thirty-sixth and Greenfield Avenue, has been married to Mrs. Grace W. Johnson, his former private secretary. The nuptial ceremony is a culmination of an office romance which started some months ago, when Mrs. Johnson was loaned to Mr. Spaulding by the First Wisconsin National Bank, her employers at that time, to help him through a particular rush of business. Soon after she was duly employed as regular "right hand" to Mr. Spaulding in his business, and very recently her duties were extended to include even the most private of Mr. Spaulding's affairs—his home. The couple was married at Evanston, Ill., with the intention of surprising a host of friends upon their return from the honeymoon, but newspapers spilled the beans.

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GEORGIA CLAY RESEARCH.

FOLKS DOWN IN GEORGIA show a commendable spirit of aggressiveness in the investigation and development of Georgia clay resources. The latest is a report from the Department of the Interior of co-operative work between this department and the Central of Georgia Railway in some research work at the Ceramic Experiment Station at the Bureau of Mines, Columbus, Ohio, to determine the value for ceramic use of a number of Georgia clays. The investigation was divided into five parts, clay washing, laboratory work on crude and washed clays, manufacture and testing of refractory materials, manufacture of vitrified brick, and manufacture of white ware. The official report says:

"Washing tests on some of the most promising clays were made in the special washer developed by the Bureau of Mines. These tests, supplemented by laboratory tests to determine the burning, shrinkage and other properties of the clays, showed that some of the clays were suitable for manufacture of white ware. Others proved to be excellent filler material, and the southern station of the Bureau of Mines is using these washed clays in plant practice tests in the filler trade.

"The clays selected in general are, if properly prepared, suitable for the manufacture of refractories. Therefore, 20 tons of a selected clay were made up into fire clay shapes at a large manufacturing plant in accordance with plant practice. These bricks have been tested in doors and roof of an electric furnace for melting steel, in oil fired furnaces, for steel-pouring ladles, in boiler settings, in ceramic kilns, and as bungs in furnaces for making malleable iron. They gave exceptional service in practically all tests.

"Experiments are in progress to develop face brick from

certain of these clays, and present results indicate that a satisfactory product will be obtained. The purpose of this work is to produce a vitreous, buff-face brick, which type of brick can not be made from materials at present in use in the South. The bricks dry well and when properly made burn to a pleasing buff without checking.

"Semi-commercial scale tests at two plants show that several of the Georgia clays can be used in floor tile bodies. In wall-tile bodies a much smaller proportion of clay is desirable to prevent checking. Factory tests on white ware and electrical porcelain are in progress."

NORTHERN CERAMIC LIGHTS.

Building conditions in the western provinces of Canada have been steadily improving during the past year, though none of the clay products plants have been operating to full capacity, and a few have remained idle, reducing stock.

The outlook for 1924 is quite hopeful. A number of fairly large buildings are to be constructed; a contract was recently let for a \$500,000 hospital to be built at Saskatoon. The building is to be faced with rough texture face brick, produced in Saskatchewan. All hollow tiles to be used are of local make, as well as much of the other clay ware. In fact, in so far as possible, the clay products are to be of Western Canada production.

Much interest is being taken in the development of the Saskatchewan fire clays; recent tests have demonstrated that from them ware equal to any now being imported can be produced. From now on it will be a matter of production to care for the Canadian trade.



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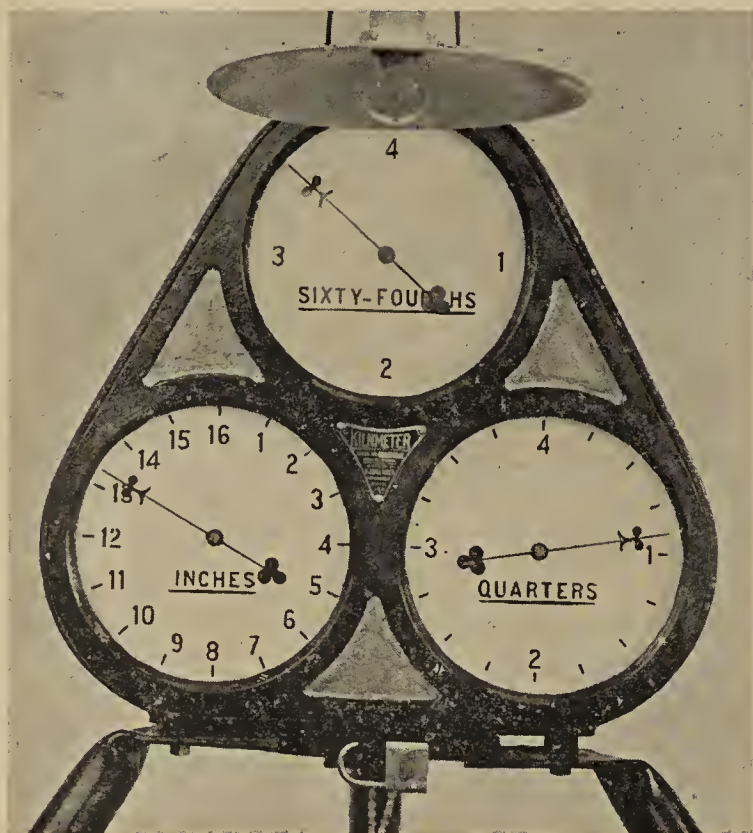
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(Continued from page 563)

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HOWARD, J. B., Albion Brick Co.....Albion, Ill.
HOWARD, R. B., S. S. Kimbell Brick Co.....Chicago, Ill.
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HOWINGTON, MRS. JAS. T.....Louisville, Ky.
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JACOBS, HARRY W., Hazelton Brick Co.....Hazelton, Pa.
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JANEWAY, AUGUSTINE S., Sox, Janeway & Co.....Philadelphia, Pa.
JENNEY, HARRY T., Sterling Brick Co.....Detroit, Mich.
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JOHNSON, JOHN C., Standard Salt & Cement Co.....Duluth, Minn.
JONES, CLINTON, Fultonham Tex. Brick Co.....E. Fultonham, Ohio
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KOCH, WM. G., Twin City Brick Co.....St. Paul, Minn.
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LABERGE, J. H., Hyde & Sons.....Montreal, Can.
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LUCKETT, MISS ESTHER.....Crawfordsville, Ind.
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 WILDE, L. G., Cincinnati Builders' Supply Co.....Cincinnati, Ohio
 WILLIAMS, F. GRAHAM, F. Graham Williams Brick Co..Atlanta, Ga.
 WILSON, F. G., F. G. Wilson & Co.....Philadelphia, Pa.
 WINFREY, C. C., Romega Clay Products Co.....Rome, Ga.
 WISEMAN, HOMER, West Va. Brick Co.....Charleston, W. Va.
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 WITTERS, R. L., Toledo Plaster & Supply Co.....Toledo, Ohio
 WITTERS, MRS. R. L.....Toledo, Ohio
 WOARE, EDWARD M., Decatur Brick Mfg. Co.....Decatur, Ill.
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 WORTLEY, A. C., Puritan Brick & Tile Co.....Detroit, Mich.
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FOR SALE.

FOR SALE.

One pair straight rollers with shafts 20 inches in diameter, 24-inch face for Brewer crusher.

KANKAKEE TILE & BRICK CO.,
11 3 c Kankakee, Ill.

FOR SALE.

Two 500-lb. 500-light Davis acetylene lighting generators, suitable for a large factory or farm or a small village. Perfect condition. Guaranteed like new. First offer takes them.

POLLEY SUPPLY CO.,
11 1 cm S. Norwalk, Conn.

FOR SALE.

One Bonnot auger machine, 50,000 to 60,000 capacity; one Freese automatic reciprocating 14-brick cutter; two American represses, all in excellent condition. Immediate delivery.

WELLSVILLE FIRE BRICK CO.,
10 3 d Wellsville, Mo.

FOR SALE.

25,000 wooden pallets, 34 by 10; good as new. Half price. Also racks.

PADUCAH BRICK & TILE CO.,
11 tf d Paducah, Ky.

FOR SALE.

Two Fate Special Premier combination auger machines in good running condition. Immediate delivery.

Address Machine,
11 tf d Care The Clay-Worker.

FOR SALE.

Brick plant with twenty acres excellent clay land, equipped with Fernholtz press, having daily capacity 20,000. Plenty labor; good market. Can be bought reasonably and on good terms.

INDIANOLA BRICK CO.,
11 3 c Indianola, Miss.

FOR SALE.

Two large sized Patterson Foundry & Machine Co.'s filter presses and slip pump, only been used a short time, and are as good as new. Can be shipped on short notice. Address

J. P. TETER,
12 1 c Indianapolis, Ind.

ATTENTION!

CAN YOU QUALIFY?

If anyone knowing the clay products game from a practical standpoint, and has got the push to make, in a selling position, covering a line of well-established equipment, from \$6,000 to \$10,000 per year, let him apply to

SALESMAN,
12 1 d Care The Clay-Worker.

FOR SALE.

Twenty to seventy acres of a good seam of shale, under this a five-foot vein of good coal, and under the coal a thick vein of fire clay. Overburden one to fifteen feet. On the C., M. & St. P. railway, 160 miles south of Chicago. Samples for analysis sent on request.

INTERURBAN COAL COMPANY,
11 2 cm Clinton, Ind.

FOR SALE.

Two second-hand Bensing Cutters in good order. Will dispose at reasonable price.

Address CUTTERS,
9 4 c Care Clay-Worker.

THE CLAY WORKER



MERRY CHRISTMAS!

*We take this opportunity
To send a wish of Yuletide Cheer,
To each and everyone of you
Who see this little message here.*

*May you have every Christmas Joy,
Good things to eat, good Friends galore,
And every good and perfect gift,
As well, through Nineteen Twenty Four.*

T·A·RANDALL·&·CO
PUBLISHERS·INDIANAPOLIS

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Page 602

WELLER EQUIPMENT

FOR BRICK AND CLAY PLANTS

Weller Spiral Conveyors



Cold Rolled Steel Sectional Flights. Evenly Balanced. Run True. Wear Long. Worn Parts Easily Replaced.

WELLER STYLE "A" BELT CONVEYOR ROLLS



Three Types

Made with 6 and 8-inch rolls. Standard. Heavy. Extra heavy. Oscillating type bearings. Each bearing is equipped with an individual lubricating device.



A Few of the WELLER PRODUCTS

Apron Feeders
Belt Conveyors
Chain Conveyors
Spiral Conveyors
Bucket Elevators
Elevator Buckets
Screens
Power Shovels
Car Pullers
Chain Sprockets
Gears
Friction Clutches
Heavy Sheet Metal Work
Coal Handling Machinery
Power Transmitting Machinery
Etc.

Tell Us the Kind of Equipment You Are Interested In—Catalogues Will be Sent

WELLER MFG. CO.

1820-1856 N. KOSTNER AVE.

CHICAGO, ILL.

New York

Boston

Baltimore

SALES OFFICES:

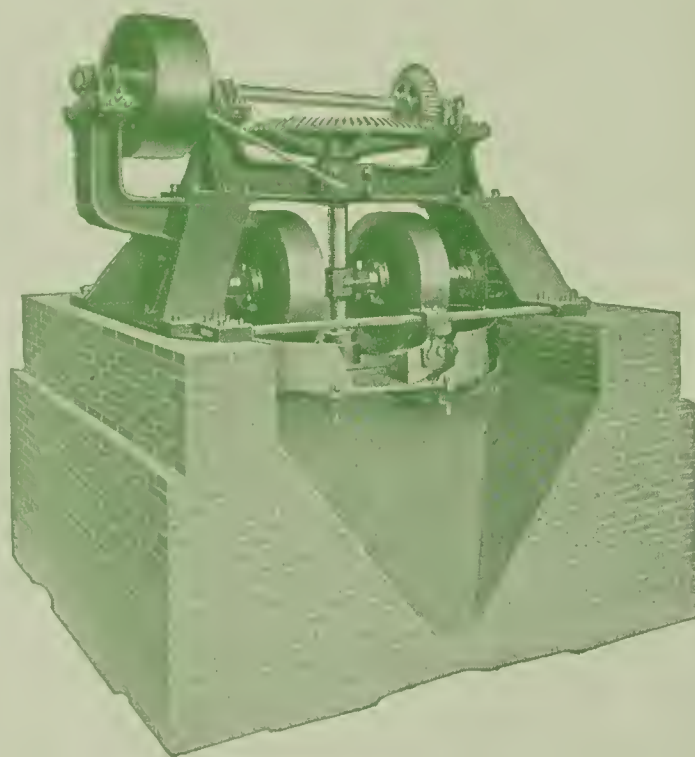
Pittsburgh

Cleveland

Detroit

San Francisco

WHY COUNT FIRST COST ONLY



When selecting new grinding equipment it will pay you to investigate the comparative cost for repairs. TORONTO pans will save you in the cost of spare parts more than the difference in first cost. This is an item well worth your consideration when installing a new machine.

Install Toronto Pans and Reduce
Maintenance Costs

Type 'B' 10 Ft. Dry Pan

The Toronto Foundry & Machine Co. Toronto, Ohio



Helpless Before the Little Thing!

NO animal is *big* enough to stop an elephant, but the insignificant mouse does it. Hardly anything is big enough to stop a man with brains, but to man, the microbe—so small it can't be seen except under a microscope—is deadly.

So in industry, in your business: the little things stop and defeat the big. Consider the powdered particles in your grinding mill. They're fine, sometimes as fine as dust. Apparently they're harmless. *But—*

As they accumulate in your mill, they form a cushion as soft and unstable as mercury or quicksand.

Lump material sinks down into this cushion, snug and safe there, like a babe in a great, big feather bed.

Thus, your mill turns and turns, wasting half its energy. The grinding process is only half effective. You pay double for what you get

out. And that's because the cushion of powdered particles always resists the grinding process, always slows it up, always reduces your output and your profit.

The mouse stops your elephant.

This is not the fault of your mill. If you will eject the powdered material and give the mill a chance, the same mill will do twice the work it is now doing and you will get 100% more output and more profit.

Can it be done? It can. It is being done in many plants in America today, as never before, with the aid of that remarkable producer of bigger outputs and bigger profits—the HUM-MER.

The first step toward bigger output and bigger profit is to know for yourself exactly what the HUM-MER is and what it does. We shall be glad to supply you the information.



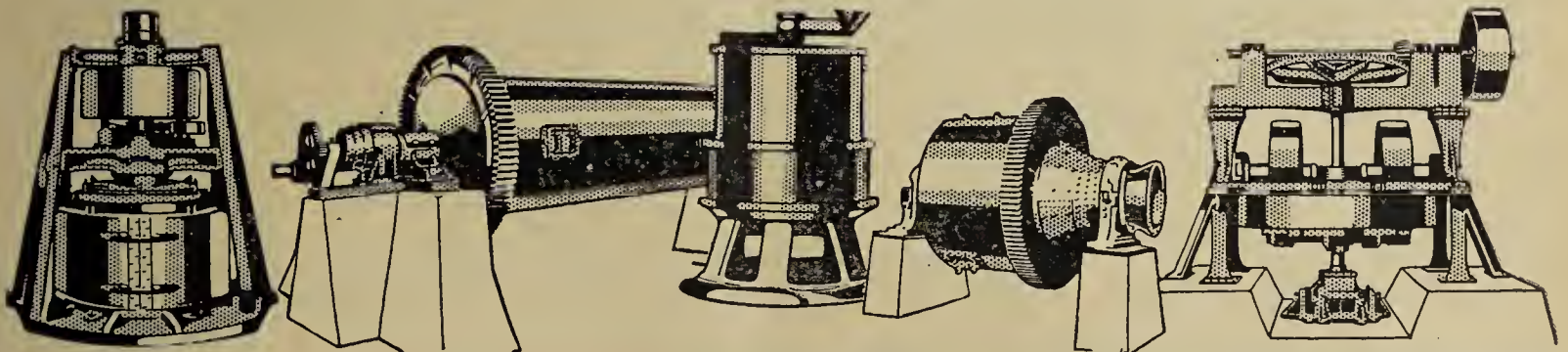
Type 37
6-Foot, 2-Surface
HUM-MER
Electric Screen

"Screening for Profit"

Catalogue 45-W sent on request

THE W. S. TYLER COMPANY
Cleveland, Ohio

Manufacturers of Woven Wire Screens
and Screening Equipment



MAKE ROUGH TEXTURES ON YOUR OWN PRESS

See How in St. Louis and Elsewhere.



The White Brick Press with Progress Rough Texture Attachment.

Buy mould and attachment only

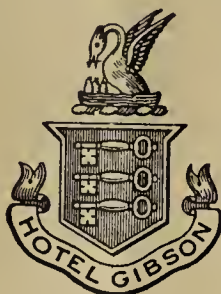
Progress Press Brick & Machine Co.

Furnish Plans For Up or Down Draft Kilns.

ST. LOUIS, MO.

(Send for Sample and Circular.)

CINCINNATI'S HOTEL GIBSON



Headquarters
for
NATIONAL BRICK MANUFACTURERS
ASSOCIATION CONVENTION
January 28th to February 2nd, inclusive
Early reservations suggested.

Buyers Ready Reference List

To Find Any Particular Firm or Advertisement See "Index to Ads" as Cited on Front Cover Page

Arch Cutting Apparatus.
Ceramic Supply & Con. Co.
Automatic Clay Bin Emptier.
Fate-Root-Heath Co.
International Clay Mach. Co.

Barrows and Trucks.
Anderson Fdy. & Mach. Works.
Brewer & Co., H.
Chambers Bros. Co.
Ceramic Supply & Con. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Phila. Brick Machine Works.
Potts & Co., C. & G.
Robinson, F. H.
Steele & Sons, J. C.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.
Weller Mfg. Co.
Wellington Machine Co.

Barytes, Carbonate of.
Roessler-Hasslacher Chem. Co.
Williams, C. K. & Co.

Belting.
Gandy Belting Co.
Manufacturers' Equipment Co.
Weller Mfg. Co.

Belt Conveyors.
Bonnot Co., The
Brewer & Co., H.

Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Gandy Belting Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Phila. Brick Machine Works
Potts & Co., C. & G.
Stevenson Co., The.
Toronto Foundry & Mach. Co.
Weller Mfg. Co.
Wellington Machine Co.

Blowers.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Trautwein Dryer & Eng. Co.

Blungers.
Mueller Machine Co., Inc.

Bollers.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.

Brick (Building).
Kushequa Brick Co.
Purinton Paving Brick Co.

Brick (Fire).
Parker-Russell M. & M. Co.

Brick (Paving).
Alton Brick Co.
Metropolitan Paving Brick Co.
Murphysboro Paving Brick Co.
Purinton Paving Brick Co.

Brick Conveyors.
Hadfield-Penfield Steel Co.
Martin Bk. Mch. Mfg. Co., Henry
Potts & Co., C. & G.
Weller Mfg. Co.

Brick and Tile Machinery.
Bonnot Co., The.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Chisholm, Boyd & White.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Phila. Brick Machine Works
Potts & Co., C. & A.
Steele & Sons, J. C.
Stevenson Co., The.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.
Wellington Machine Co., The.

Brick Machines (Soft Mud).
Anderson Fdy. & Mach. Wks.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Martin Bk. Mch. Mfg. Co., Henry
Phila. Brick Machine Works
Potts & Co., C. & G.
Robinson, F. H.
Wellington Machine Co., The

Brick Machines (Stiff Mud).
Bonnot Co., The.
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Robinson, F. H.
Steele & Sons, J. C.
Stevenson Co., The
Wallace Mfg. Co.

Brick Machines (Dry Press).
Anderson Fdy. & Mach. Works
Chisholm, Boyd & White.
Chicago Brick Machinery Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Progress Press B. & Mach. Co.

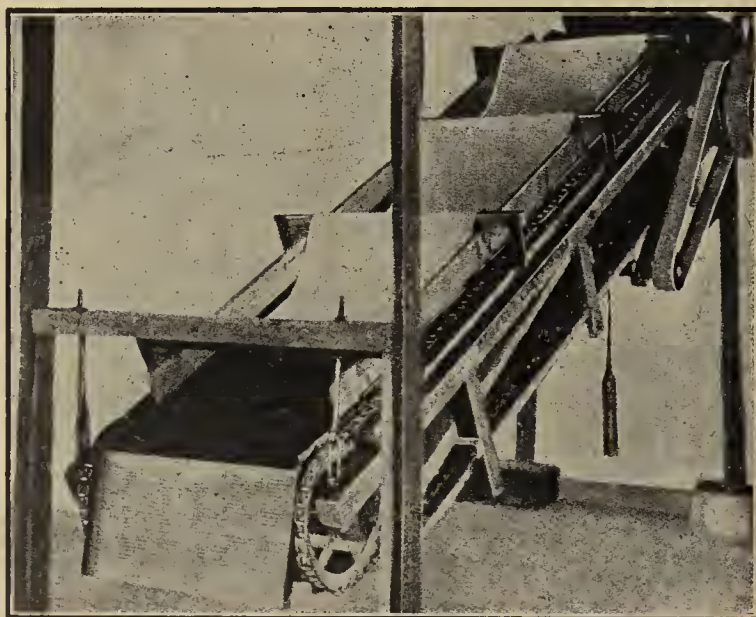
Brick Setting Machinery.
Hadfield-Penfield Steel Co.
Buckets, Elevator.
Hendrick Mfg. Co.

Buffing Machinery.
Hadfield-Penfield Steel Co.

Burning and Drying Systems.
Boss Engineering Co., J. C.
Ceramic Supply & Con. Co.
Hadfield-Penfield Steel Co.

(Continued on Page 530)

PERFECT CLAY SCREEN



PERFECT CLAY SCREEN

adjusting and controlling advantages not otherwise obtainable.

DUNLAP MANUFACTURING COMPANY
Bloomington, Illinois

WAS A CASE OF NECESSITY

Designed in 1896 for screening wet shale for making Semi-Dry Pressed Brick. The moisture content was 15 per cent, being difficult to secure quantity and quality.

THE TASK WAS ACCOMPLISHED

And THE PERFECT CLAY SCREEN HAS BEEN AND IS STILL ABSOLUTELY CLEANING THE TAILINGS, Increasing capacity, yet maintaining quantity and quality in hundreds of the best clay product plants throughout the U. S. A.

The design and construction permits

GANDY BELT *is* TOUGH



One GANDY Leads to Another

THIS 24 x 6 ply Gandy cup Conveyor, owned by the Carolina Shale Brick Company, has been in service nearly eight months now and still looks good as new. A short time? It has already lasted longer than two previous installations of another make of belt. The Gandy was installed because the Carolina folks had used Gandy and Thermo-Gandy belts in another plant and found them best. The fact that they bought this belt proves it.

Gandy Belts give best service on rough work because they are built of best materials by workmen who know how to build good belting. Gandy Belts last longer because they are tough. They will save money for you on your Main Drives, General Transmission, Elevators and Conveyors. Just try one Gandy Belt.

"It's the Belt with the Green Edge"

THE
GANDY BELTING COMPANY

MAIN OFFICE AND FACTORY: 749 WEST PRATT ST., BALTIMORE, MD.
NEW YORK: 36 WARREN STREET CHICAGO: 552 W. ADAMS STREET



GANDY
STITCHED COTTON DUCK
BELT

Buyers Ready Reference List—Continued

International Clay Mach. Co.
Manufacturers Equipment Co.
Minter System, The
Robinson, F. H.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Car Counter.

Robinson, F. H.

Castings.

Chambers Bros. Co.
Dee, Wm. E. & Co.
Fate-Root-Heath Co.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Potts & Co., C. & G.
Stevenson Co., The.
Toronto Foundry & Mach. Co.
Weller Mfg. Co.
Wellington Machine Co.

Ceramic & Constr. Engineers.

Beecher, A. W.
Ceramic Supply & Con. Co.
International Clay Mach'y Co.
Lovejoy, Ellis
Manufacturers Equipment Co.
Richardson, W. D.
Robertson-Pease Co.
Trautwein Dryer & Eng. Co.

Clays (Ball, China, Enamel, Fire, Potters, Sagger.)

United Mines Clay Corp.,

Clay Crushers and Pulverizers.

Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers' Equipment Co.
Phila. Brick Machine Works.
Phillips & McLaren Co.
Potts & Co., C. & G.
Stevenson Co., The.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.

Clay Dryers.

American Process Co.
Hendrick Mfg. Co.
Lancaster Iron Works.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.
Wellington Machine Co.

Clay Feeders and Mixers.

Arbuckle & Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Marion Mach., Fdy. & Sup. Co.
Martin Bk. Mch. Mfg. Co., Henry
Phila. Brick Machine Works
Potts & Co., C. & G.
Robinson, F. H.
The Stevenson Co.
Wellington Machine Co.

Clay Miners.

Florida China Clay Co.
United Mines Clay Corp.,

Clay Steamers.

Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Robinson, F. H.

Clay Technologists.

Bonnot Co., The.
Ceramic Supply & Con. Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.

Lovejoy, Ellis.
Trautwein Dryer & Eng. Co.
Wellington Machine Co.

Coal.

Bertha Consumers Co.

Coal Unloader.

Columbus Conveyor Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Coloring Materials.

Chattanooga Paint Co.
Hy-Grade Manganese Co.
National Paint and Manganese Co.
Ricketson Mineral Paint Co.
Roessler-Hasslacher Chem. Co.
Williams & Co., C. K.

Consulting Engineers.

Lovejoy, Ellis
Richardson, W. D.
Robertson-Pease Co.
Trautwein Dryer & Eng. Co.

Conveying Machinery.

Bonnot Co., The.
Brewer & Co., H.
Phila. Brick Machine Works
Chambers Bros. Co.
Columbus Conveyor Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Hendrick Mfg. Co., The
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Marinette Iron Works.
Mueller Machine Co.
Potts & Co., C. & G.
Robinson, F. H.
Toronto Foundry & Mach. Co.
Weller Mfg. Co., The.
Wellington Machine Co., The.

Continuous Kilns.

Ceramic Supply & Con. Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.

Cutting Tables (Brick & Tile).

Bonnot Co., The.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers Equipment Co.
Robinson, F. H.
Steele & Sons, J. C.
Wallace Mfg. Co.
Wellington Machine Co., The.

Crushers.

Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Wellington Machine Co.

Cutting Wires.

Bonnot Co., The.
Brewer & Co., H.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers Equipment Co.
Robinson, F. H.

Dies.

Louisville Machine Mfg. Co.
Mueller Machine Co.
Robinson, F. H.
Stevenson Co., The.
Toronto Foundry & Mach. Co.

Disintegrators and Granulators.

Anderson Fdy. & Mach. Works
Bonnot Co., The.

Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Potts & Co., C. & G.
Robinson, F. H.
Steele & Sons, J. C.
Wallace Mfg. Co.
Wellington Machine Co., The.

Draft Gauges.

Ceramic Supply & Con. Co.
Robinson, F. H.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

Drain Tile Machinery.

(See Brick & Tile Machinery.)
Drums, Holsting and Winding.
(See Supplies.)

Dryers.

American Process Co.
Boss Engineering Co., J. C.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
Hendrick Mfg. Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Minter System, The
Pioneer Mach. & Eng. Co.
Proctor & Schwartz
Robinson, F. H.
Standard Dry Kiln Co., The
Trautwein Dryer & Eng. Co.
Wellington Machine Co.

Dryer Cars.

Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Potts & Co., C. & G.
F. H. Robinson
Standard Dry Kiln Co., The
Steele & Sons, J. C.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.
Wellington Machine Co.

Dry and Wet Pans.

Anderson Fdy. & Mach. Works
Bonnot Co., The.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Chisholm, Boyd & White.
Clearfield Machine Shops.
Eagle Iron Works
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Hendrick Mfg. Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Phillips & McLaren Co.
Stevenson Co., The.
Toronto Foundry & Mach. Co.

Dump and Clay Cars.

Brewer & Co., H.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Hendrick Mfg. Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Potts & Co., C. & G.
Robinson, F. H.
Steele & Sons, J. C.
Toronto Foundry & Mach. Co.
Weller Mfg. Co.
Wellington Machine Co.

Electrical Supplies.

Hadfield-Penfield Steel Co.

Elevator Buckets.

Hendrick Mfg. Co.

Elevating Equipment.

(See Conveyors.)

Engines.

Chambers Bros. Co.
Frost Mfg. Co.
International Clay Mach'y Co.
Phila. Brick Machine Works

Excavators.

Schofield-Burkett Con. Co.

Fans.

Boss Engineering Co., J. C.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.

Filter Presses.

Bonnot Co., The.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Mueller Machine Co.

Fire Brick and Fire Clay.

Parker-Russell M. & M. Co.

Friction Clutch Pulleys.

(See Supplies.)

Furnaces.

Lancaster Iron Works.
Robertson-Pease Co.

Gas Fire Continuous Kilns.

International Clay Mach'y Co.
Manufacturers Equipment Co.

Gears.

Hadfield-Penfield Steel Co.
Manufacturers Equipment Co.
Marion Mach., Fdy. & Sup. Co.
Potts & Co., C. & G.
Wellington Machine Co.

Gloves.

Des Moines Glove Mfg. Co.

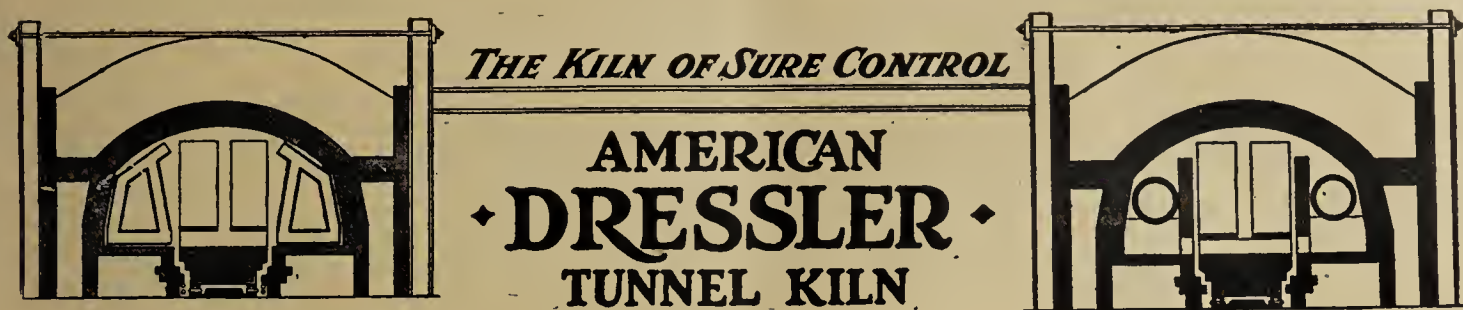
Gravity Haulage.

Hadfield-Penfield Steel Co.
Stevenson Co., The.

Hand-Power Presses.

Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Mueller Machine Co.
Phila. Brick Machine Works

(Continued on Page 534)



BURNING PROBLEMS!!!

The burning problem of the clay manufacturer is—
How can I get the best brick and tile with the lowest
burning cost?

The problem answered!

Dressler Kilns will burn 700 tons of brick or tile
weekly at the lowest possible cost.

The savings in fuel, labor, time, maintenance and
quality will pay for the installation.

This is not a theory or a promise but a tangible fact.

GO and SEE!!!

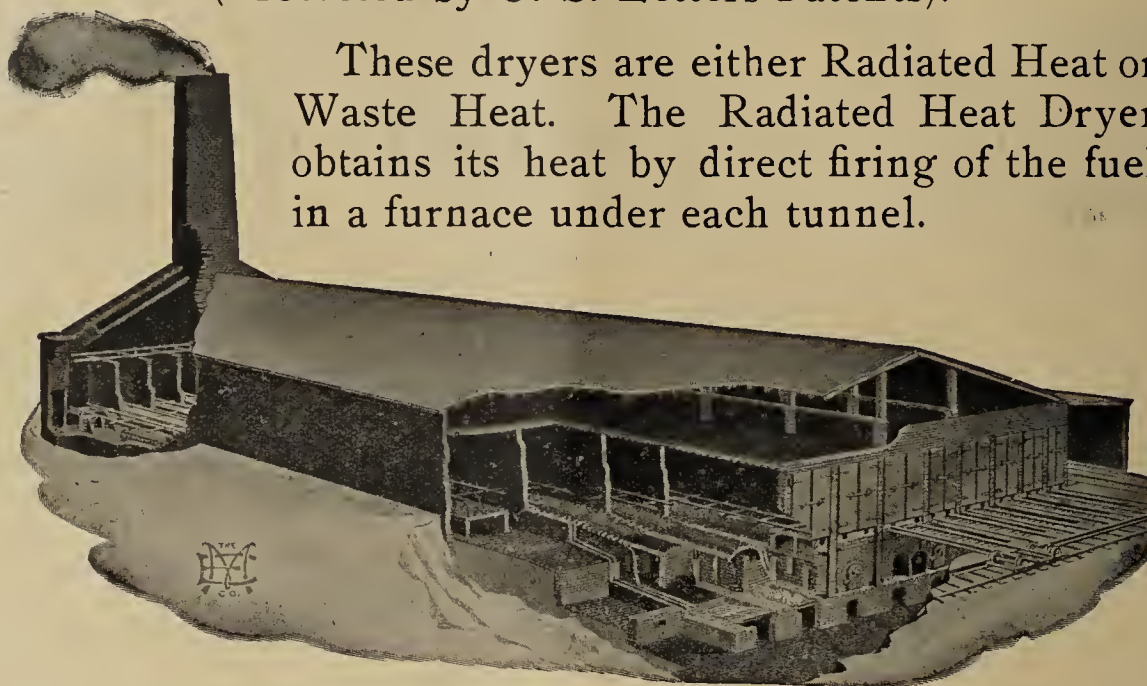
American Dressler Tunnel Kilns, Inc.,

1740 E. 12th St.

Cleveland, Ohio

JUSTICE CLAY PRODUCTS DRYERS

(Protected by U. S. Letters Patents).



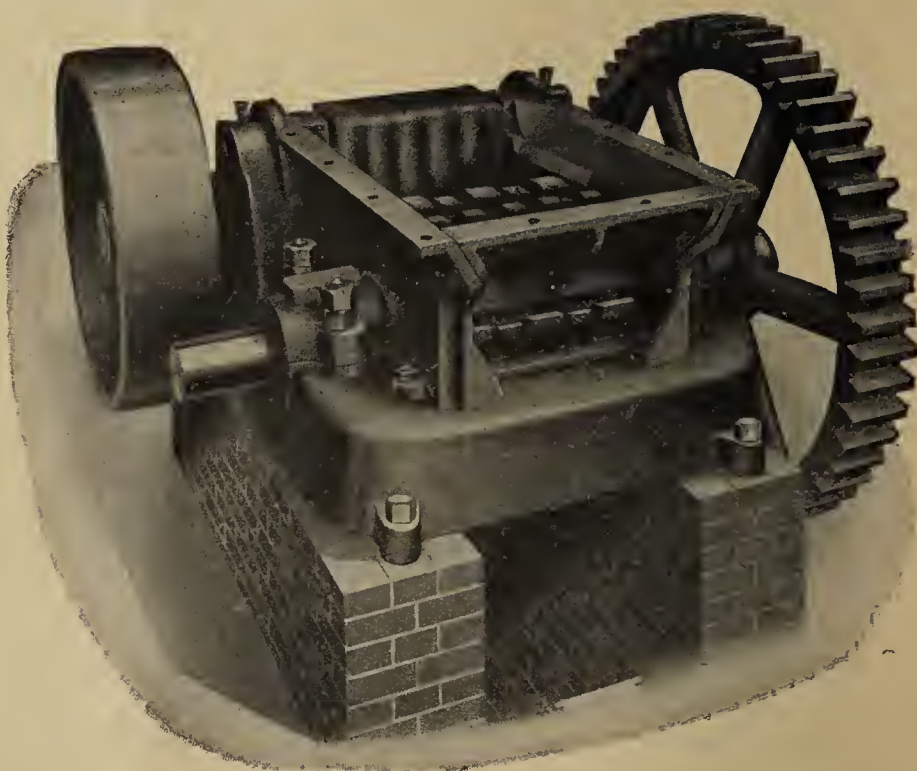
These dryers are either Radiated Heat or Waste Heat. The Radiated Heat Dryer obtains its heat by direct firing of the fuel in a furnace under each tunnel.

The Waste Heat Dryer obtains its heat from cooling kilns. Only **one** fan is used to reclaim the heat and force it through the dryer. The operation of these dryers embrace all the natural and scientific principles known in drying Heavy Clay Products and are most economical. Used by the industry for sixteen years.

MECO SINGLE ROLL ROCK AND SHALE CRUSHERS

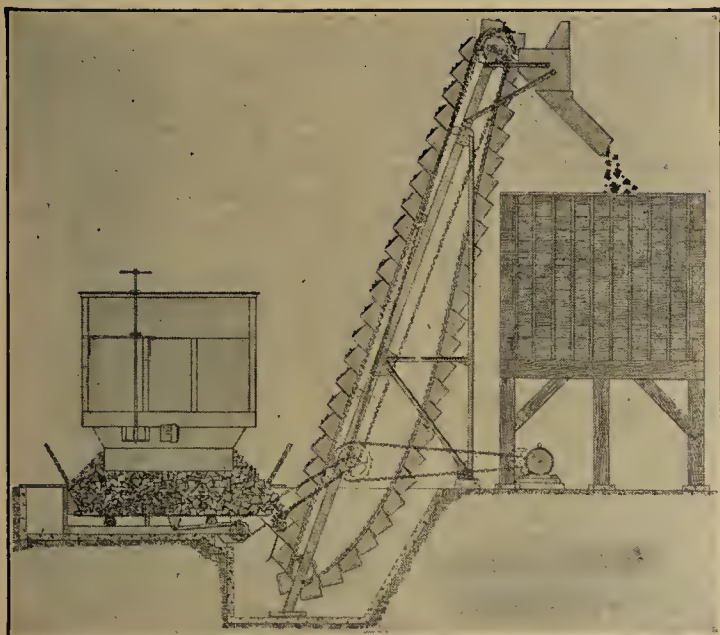
Are stronger and heavier than all others. Every Crusher has a cast-in-one piece frame and not built up of parts and bolts. Every Crusher has a solid cast in one piece roll of proper metal making it more durable and less expensive by test than rolls built of castings, steel parts, bolts nuts and washers.

Meco Crushers are best. On the market more than thirty years.



THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U. S. A.

"MECO" AUTOMATIC COAL UNLOADER



Don't worry about men to unload and store your coal and the high cost of doing it. Buy and install a "Meco" Coal Unloader and **one man** can unload and store all your coal at about two cents per ton. One man per car per hour—that's all.

This Unloader has been fully developed, is mechanically correct, and has been practically demonstrated. We are prepared to make deliveries promptly covering complete equipment. We will gladly furnish literature, full description and all information upon request. It's a fifty per cent investment, investigate and buy now.

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM.

(Protected by many patents.)

Is burning clay ware in periodic kilns with Producer Gas a success? Read what Mr. H. C. Kleymeyer, General Manager, Standard Brick Mfg. Co., Evansville, Indiana, said in a paper read before the American Face Brick Association—the concluding paragraph only follows:-

"When you figure the saving in handling your coal and ashes in one place, the cleanliness of the yard around the kiln with all the other advantages such as less coal, shorter burning time, better quality ware, pure hot air for drying (when using waste heat) saving on kiln repairs, we in southern Indiana say that Producer Gas Firing is a success because it reduces cost of burning in dollars and cents and increases our income in dollars and cents by producing better and larger per cent of first class ware. What more could be said."

You may have the whole paper for the asking. Write us now for it.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U. S. A.

Buyers Ready Reference List—Continued.

Martin Bk. Mch. Mfg. Co., Henry
Phillips & McLaren Co.
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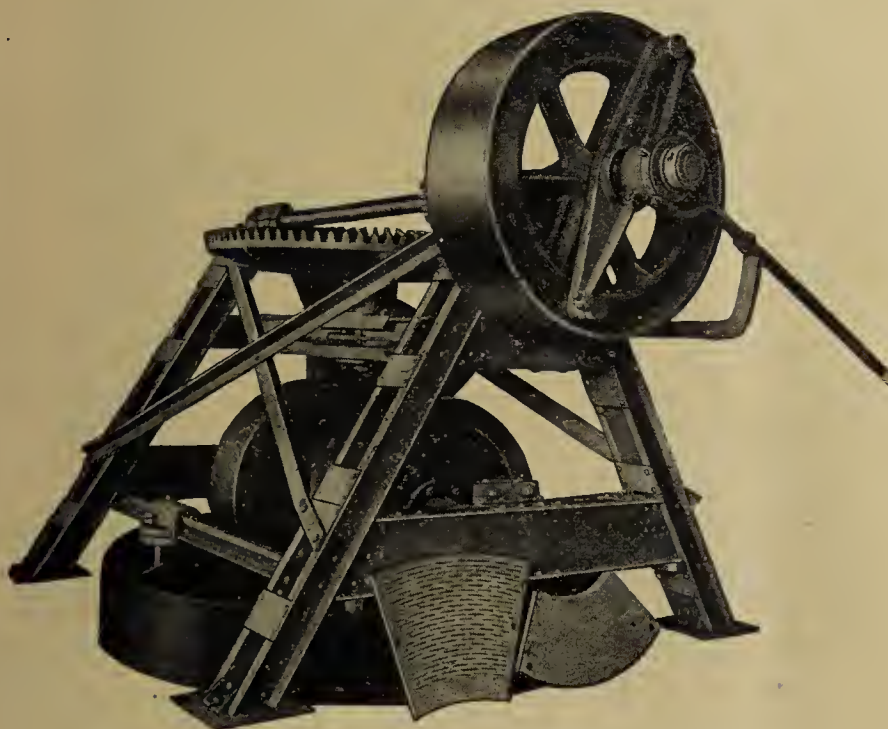
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We wish that you would ship the new machine as soon as possible.

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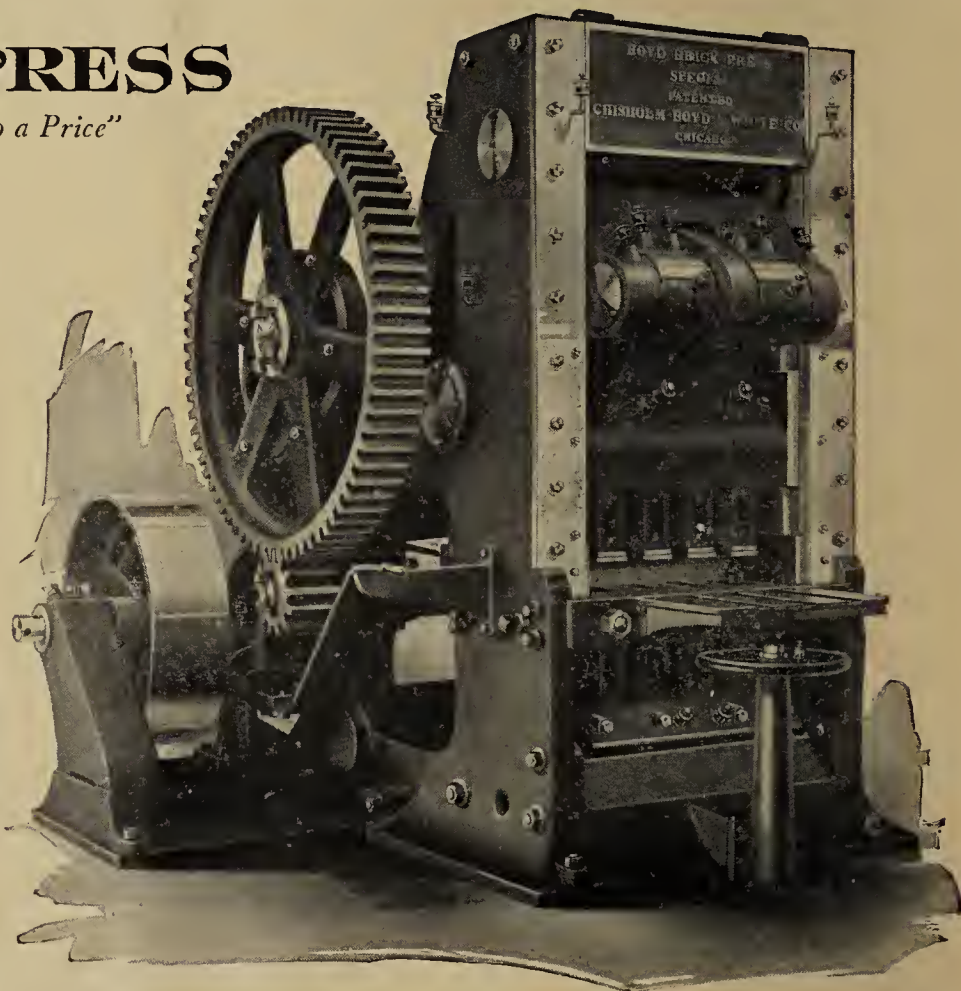
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The block with experience and service behind it.
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Highest Vitrification—Lowest Absorption.
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Tough Paving Blocks, Beautiful in Color and Finish.
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brick to be the only "Durable"
wearing surface for streets and
highways.

Write us for our latest specifications.

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Best Paving Brick Made



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BRICK



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Listed below are the titles of only a few of the many books of particular interest to Clayworkers which can be obtained promptly from our Book Department. If you do not find below just what you want, tell us what you need.

Enclosed you will find my check or P. O. Money Order, for \$.....for which please send me, postpaid, the books checked below.

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TABLE OF ANALYSES OF CLAYS <i>By Alfred Crossley</i> 40 Pages	This book contains analyses of chemically pure clays, well known common and pressed brick clays, fire clays, shales, etc., both in this country and abroad. A valuable book for those desiring to compare their clays with well known and standard clays.	\$2.00	
DRYING CLAY WARES <i>By Ellis Lovejoy</i> 166 Pages	This contains a splendid treatise covering every phase in the drying of any kind of clay ware.	\$2.00	
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VITRIFIED PAVING BRICK <i>By H. A. Wheeler</i> 121 Pages	A review of the manufacture, testing and uses of paving brick.	\$2.00	
CLAY GLAZES AND ENAMELS <i>By Henry R. Griffen</i> 138 Pages	The whole forming a treatise on glazing and enameling brick, terra cotta and pottery, including exact recipes and formulas for all colors and full instruction for preparation and application.	\$5.00	
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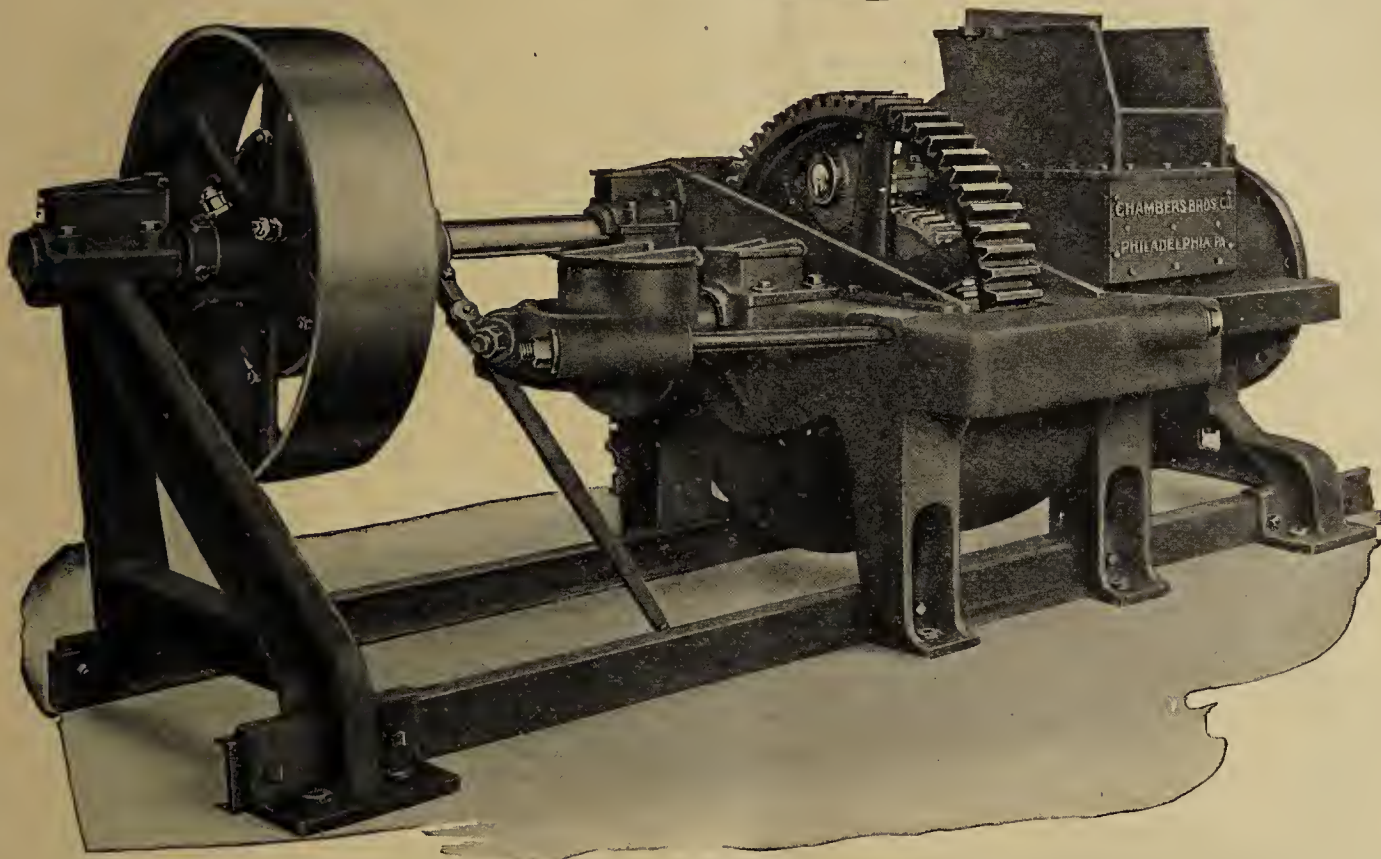
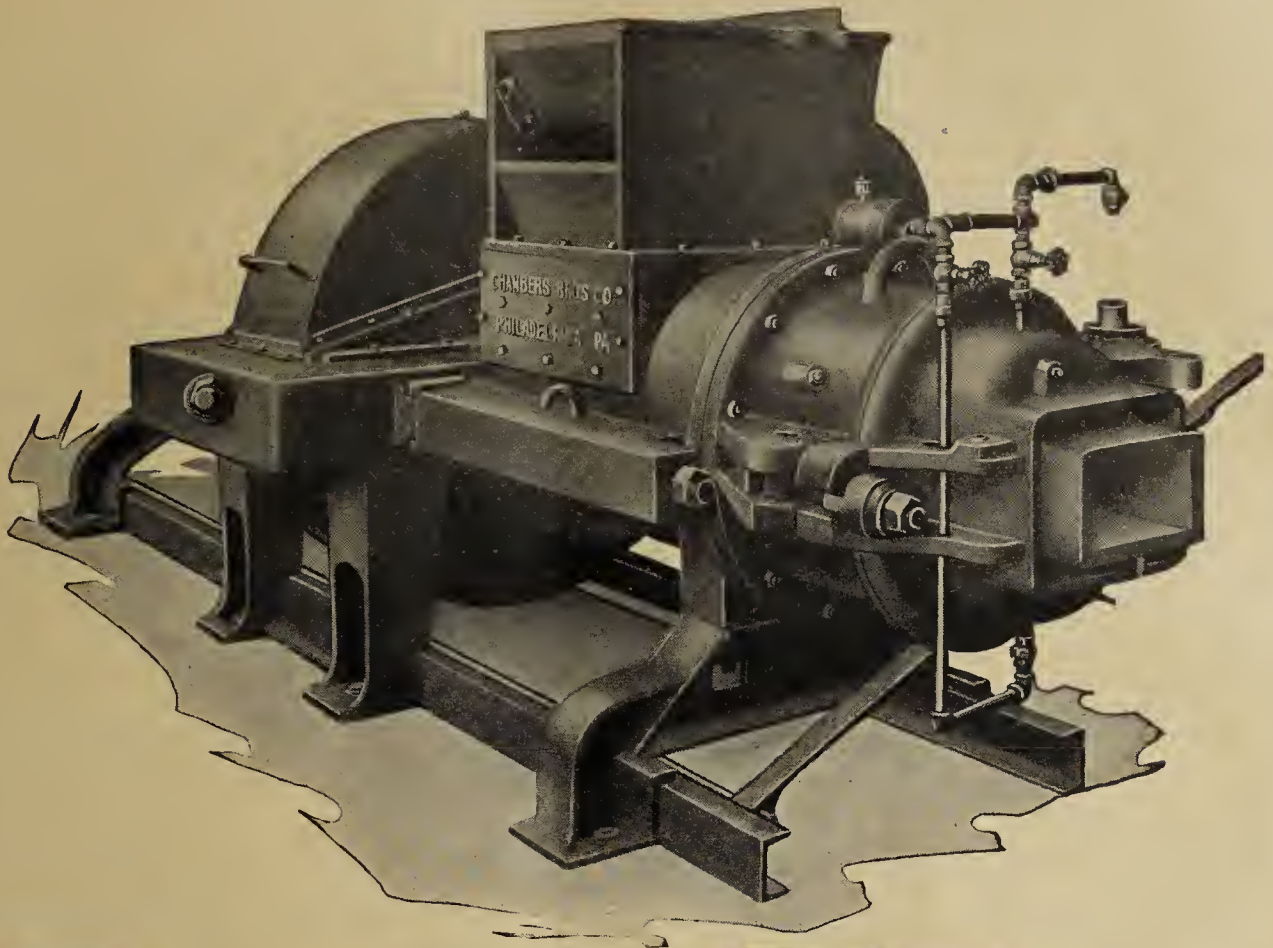
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—Send For Bulletin Number 60—

Auger Brick
and Tile
Making Machines
The Heavier
Patterns of Clay
Preparing
Machinery



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Observe the
very Substantial
Manner of Se-
curing the End
Thrust Bearing.

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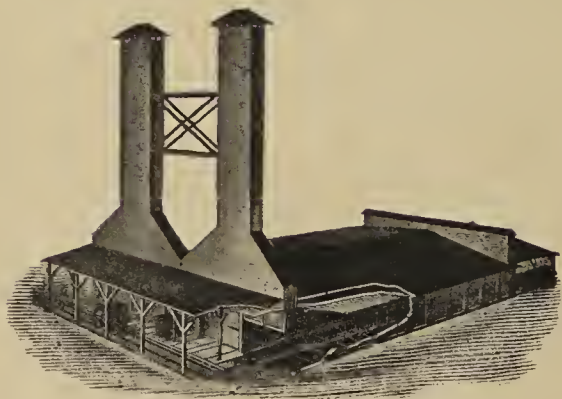
Merry Xmas

to **all** in the clayworking industry
WHETHER OUR CUSTOM-
ERS OR NOT

because

on the success of each of us is built
the progress of all.

THE STANDARD Steam Brick Drier



manufactured by The Standard Dry
Kiln Co., 1547 McCarty St.,
Indianapolis, where a copy of their
Book on Driers, for your reference
file, awaits your mere postal request.

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Pacific Northwest Company producing brick, building and drain tile in a growing territory, having also a great drainage future. Terms considered. Address CENTRAL, 112 cm Care The Clay-Worker.

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Two brick plants, capacity 30,000 each. Well located, splendid market, good prices. Sell all we make. Machinery and equipment in A1 condition; plenty of clay. Everything on property necessary to manufacture brick. Will sell at a real bargain.

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Located in Eastern Ohio. Eight round down-draft kilns. Capacity 80 tons, and can be increased. Modern equipment. Abundant clay supply. Operating regularly. Demand for products exceeds supply.

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Forty-eight soft-mud drying cars in good condition. Specifications upon request.

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Brickyard, 160 acres, located in the center of State of Massachusetts on double-track railroad, spur track siding. Clay claimed by architects the best in New England. Steam shovel at clay bank complete. Steam drier. Plenty of hard cord-wood at low price within short hauling distance. This yard has always oversold its output. Terms, one-third cash, balance on long time to responsible and experienced brick-maker. Taxes low and never any labor trouble at this yard. The sand bank in the above acreage considered by experts the best of its kind in New England for brick manufacturing. Just the place for one or two young men who are looking for a business. Questions of any kind answered in regard to business, or will show list of customers and give letters of testimonials of clay standard for brick manufacturing.

Address MASS, 123 dm Care The Clay-Worker.

IDEAL LOCATION BRICK and HOLLOW TILE PLANT

We have large acreage at Piedmont, Ga., best grade Blue Clay suitable for Brick, Hollow Tile, Terra Cotta, etc. Located on and near two railroads. Cheap labor, cheap electric power. Large supplies water. Property also includes large acreage hardwood timber, granite, etc. Will take substantial interest with responsible parties. Full information and detail maps on application to

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Fire Clay and Silica Products of Quality for Service—Especially for Kiln Construction.

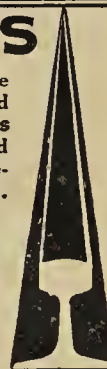
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For RAILS

Ready for immediate shipment; New and Relaying Rails, Spikes and Bolts; Frogs and Switches. Call, telephone, write or wire.

Richardson means Service.

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HIGH GRADE

OF EVERY KIND

CLAYS

FOR EVERY PURPOSE

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For Pottery and Other Purposes.

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Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

YOU HAVE KNOWN FOR YEARS THAT

RICKETSON'S MORTAR COLORS

are pure and brilliant in tone, economical in application, absolutely reliable, and a permanent guarantee against fading and washing.

Why Not Insist on Having Them?

They are the acknowledged best for all uses---Mortar, Brick, Cement, Concrete and Stone.

Red, Brown, Buff, Chocolate and Black
RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WIS.

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In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clayworkers' castings and Dies of all kinds for sewer pipe press and machines, Etc. Write for Prices

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SCHURS KILN BURNERS

An installation in your plant is not an Expense, but is an Investment which will pay Big Returns over a long period.



"Be Sure It's Schurs"

This tip does it.

The perfect water smoker.

Over 70,000 in use.

Schurs Oil Burner Co.

Established 1905.

5332 Santa Fe Ave., Los Angeles, Cal.

74 Years'

Experience
and Service!

BREWER

When you use Brewer Clayworking Machinery, you are getting the benefit of seventy-four years' experience. For nearly three quarters of a century the name Brewer has meant Quality in Design and Construction. It stands for—

Clayworking Machinery with a Reputation

One of the best endorsements you can find of Brewer-made machines is in the number of installations made in brick and tile plants, potteries, etc., in all parts of the world.

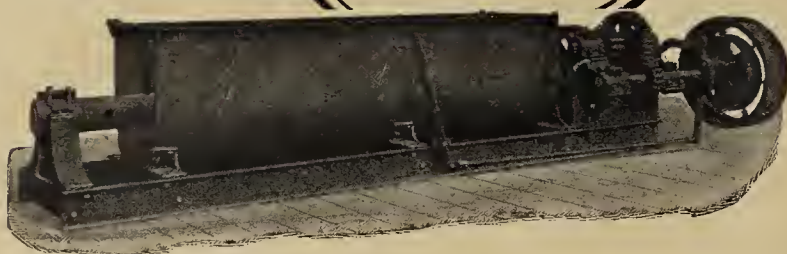
Ask about our

Free Engineering Service

and free clay tests, given entirely without obligation on your part.

Write today for the new Brewer catalog. It's free.

Pug Mills,
Crushers,
Feeders,
Cutters,
Block,
Brick and
Tile Machines,
Granulators,
Dry Pans,
Disintegrators,
Hoists, etc.



H. BREWER & CO.

Box 26

Tecumseh, Mich.

The Minter System

Why is it economical in the use of fuel?

Because waste heat dries the ware, watersmokes the kilns, preheats air for combustion. Four processes that require heat and circulation and uses Fuel For Only One.

Why is it economical to install?

Because of rapid watersmoking, preheating, burning and cooling. Reducing equipment reduces interest, overhead and capital expenditure.

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that can be manufactured from clay? Because it is flexible as to volume, humidity, temperature, heat production and distribution.

Why is it always successful?

Because it is practical, scientific, durable and produces the cheapest building material made in America today.

DON'T BUILD BEFORE YOU

KNOW THE MINTER SYSTEM

THE MINTER SYSTEM

918 Broad St. Columbus, Ga.

EASTERN PAVING BRICK MANUFACTURERS HOLD SUCCESSFUL MEETING.

The Fifth Annual Meeting of the Eastern Paving Brick Manufacturers' Association was held in New York City at the Pennsylvania Hotel on December 11, 1923. It was very well attended and was in every way a most successful meeting. The day was occupied by the reading of the various reports of the officers and by the transaction of the business of the committees. The following officers were re-elected for the coming year:

President, R. L. Winslow.

Treasurer, R. T. Hutchins.

Secretary and Chief Engineer, Wm. C. Perkins.

These are the same officers that governed the Association for the past five years.

The yardage shipped in the past year, 1,502,604 square yards, was the largest shipment of any one year since the formation of the Association.

The following resolution was adopted:

"Whereas, Almighty God in His wise providence has seen fit to take from this world the soul of our much loved and highly honored late President of the United States, Warren G. Harding,

And whereas his record as President and his character as private citizen were of such high quality as to win for him an unusual degree of esteem from all classes and all nations,

Be it resolved that we, the members of the Eastern Paving Brick Manufacturers' Association, here assembled in annual meeting in New York City this 11th day of December, year of our Lord, 1923, do go on record as having given sincere expression of our admiration of his character and profound sorrow for our National loss."

Resolutions were also adopted commending President Coolidge and Secretary Mellon for the position they have taken regarding the reduction of taxes, also commending the railroads for the efficient manner in which they have handled freight during the past year.

In the evening there was a GET-TOGETHER Dinner at the Pennsylvania Hotel at which not only the Brick Manufacturers, but many city and state highway officials and contractors were present.

COAL COMPANY MAKES IMPROVEMENTS.

For the purpose of economical operation and thorough preparation of coal, the Bertha-Conumers Company of Pittsburgh, Pa., at a cost of \$500,000, has completed installation of shaker screens, picking tables and loading booms on the tipples of all its mines, together with storage battery locomotives for gathering purposes. John H. Jones, president of the company, accompanied by his son, Marshall J. H. Jones, has just returned from an inspection tour of the properties. Mr. Jones is very optimistic concerning future business conditions and looks for continued prosperity during 1924.

THE DICKINSON DEVICE FOR COLOR EFFECTS.

GUY DICKINSON, of the Arkansas Brick & Tile Co., Little Rock, has invented and applied for patent on a unique display frame and panels for face brick in which the same faces can be shown with various mortar colors. The device consists essentially of a small frame with two panels on each side in which miniature reproductions of face brick are mounted on transparent sheets of celluloid or mica and properly spaced for mortar. The mortar effect is furnished by cardboard slides which pass in back between the front and back panels, and by use of different colors in slide cards one can get instantly a showing of the effects different mortar colors have on the appearance of the face brick panels. It is small and compact and should prove a great convenience for salesmen who desire to demonstrate models of brick panels with different kinds of mortar color effects.

MANGANESE

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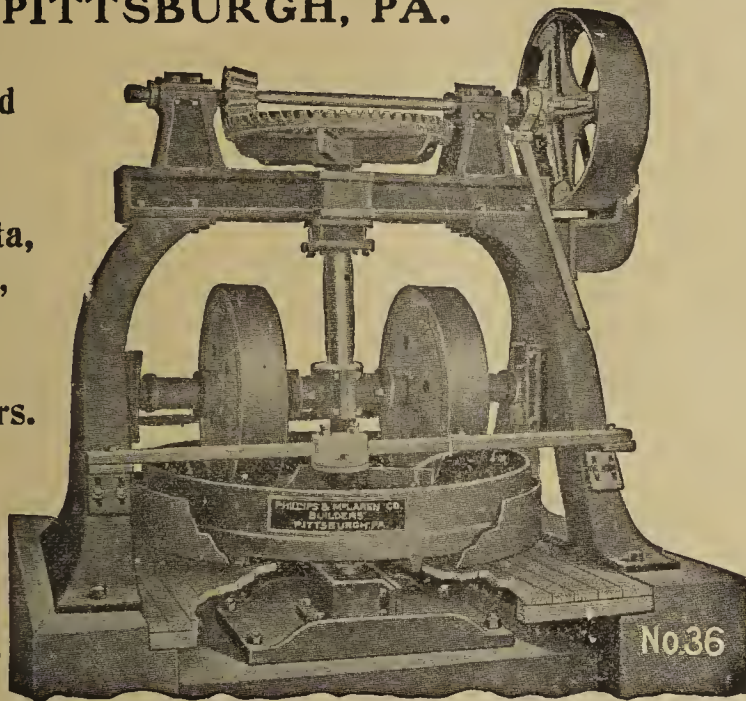
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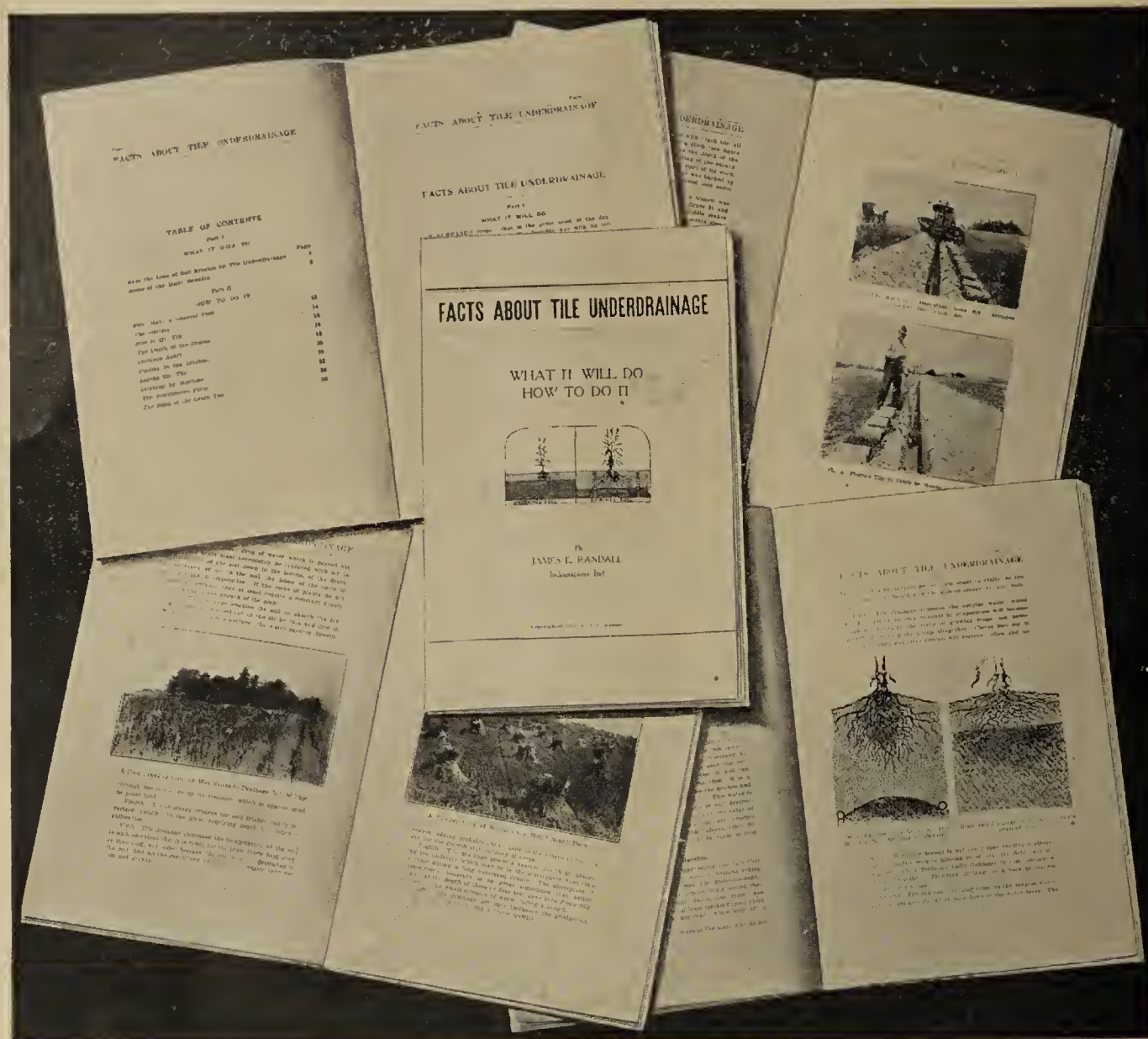
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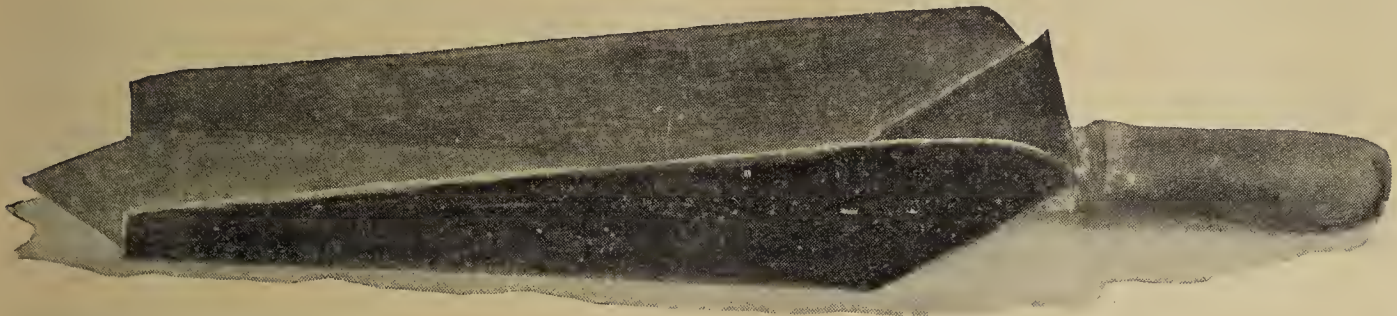
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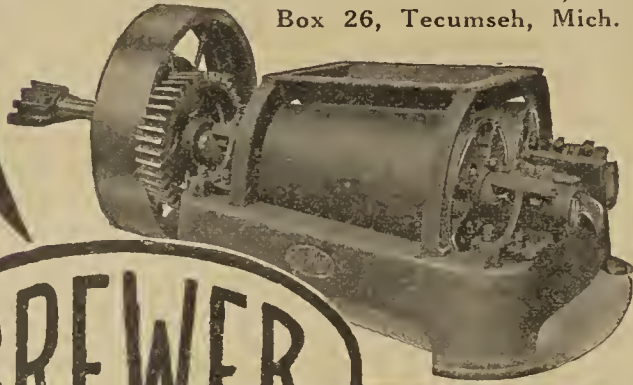
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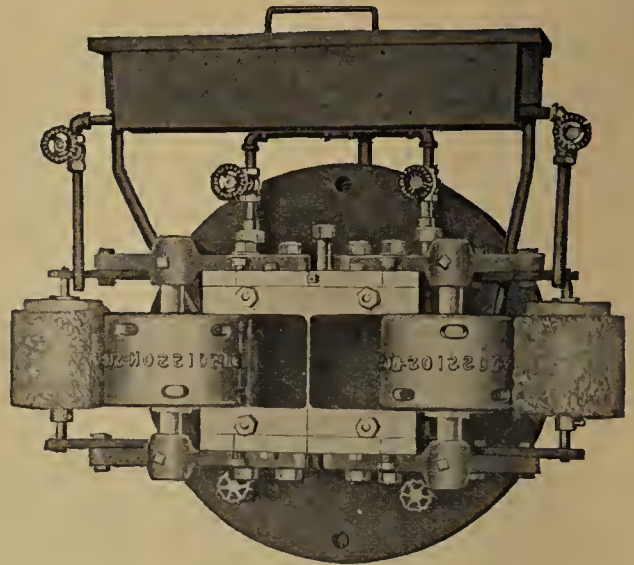
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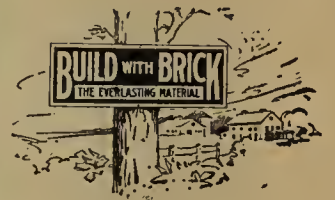
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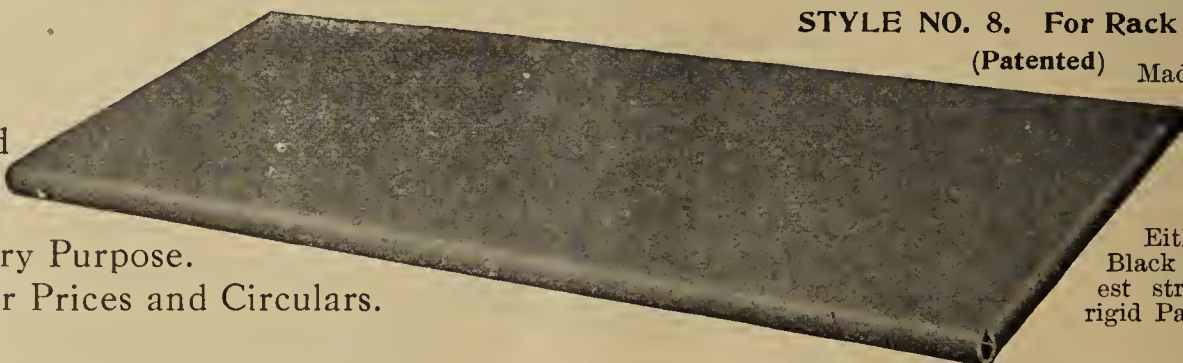
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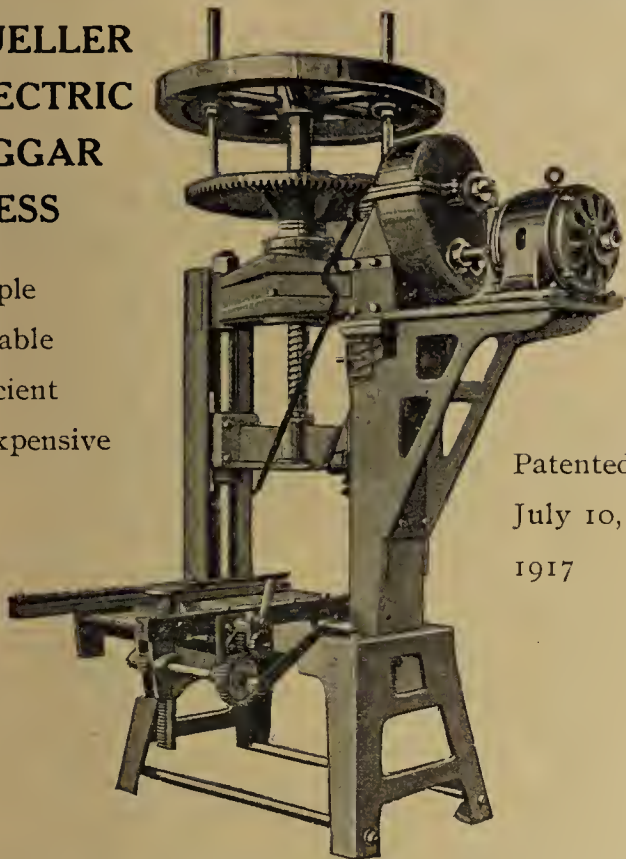
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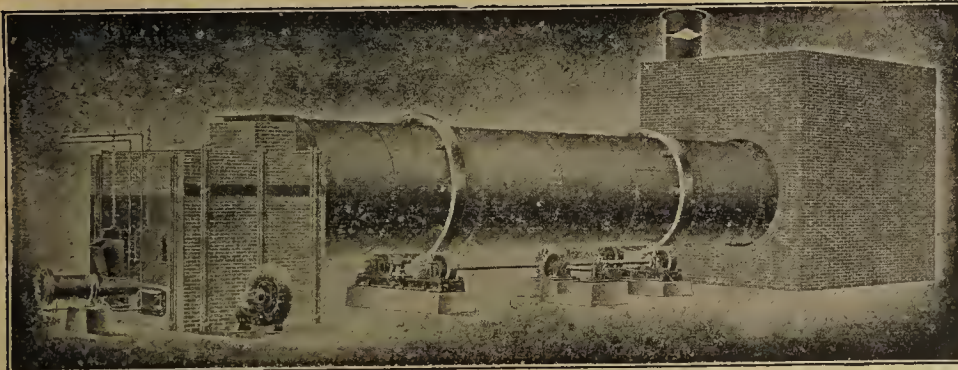
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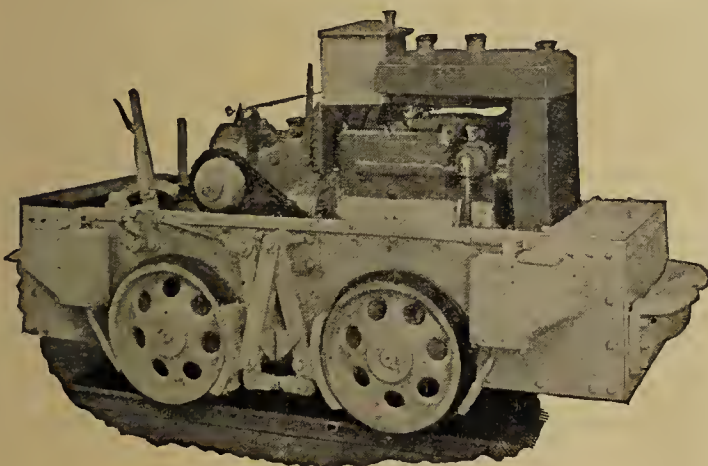
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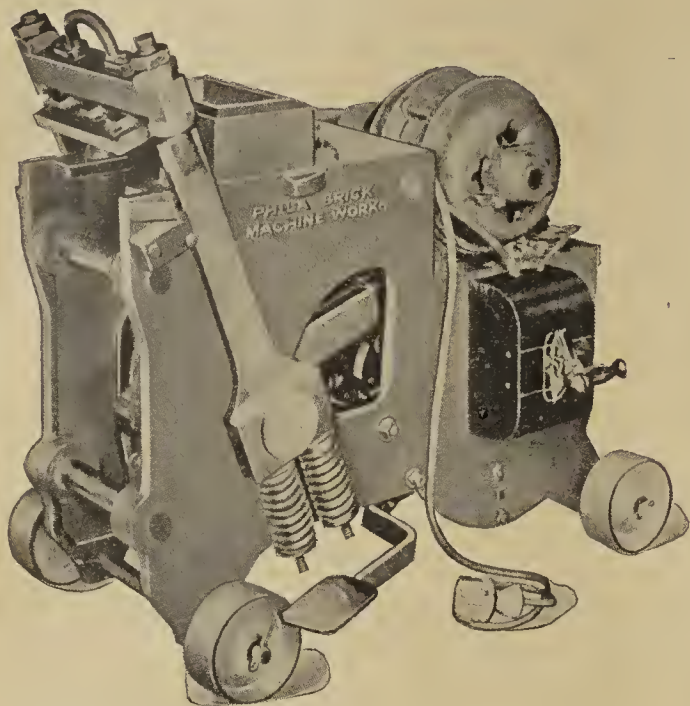
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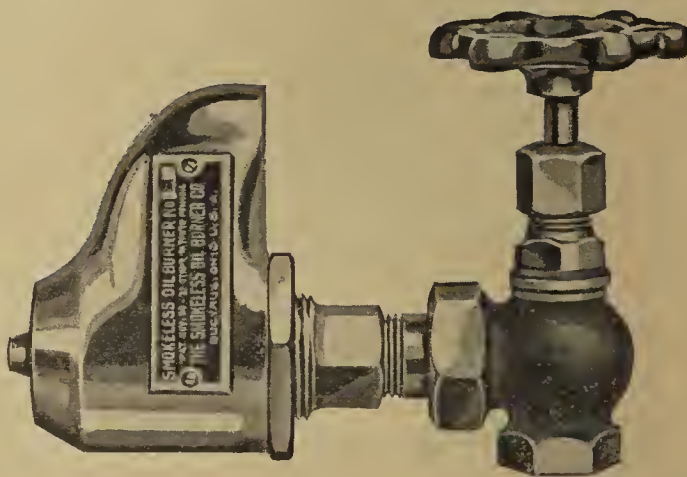
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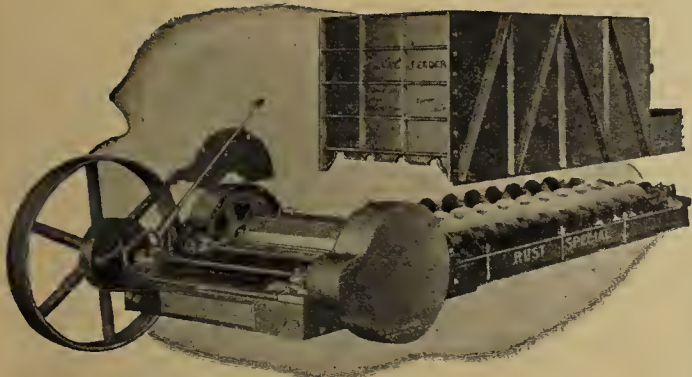
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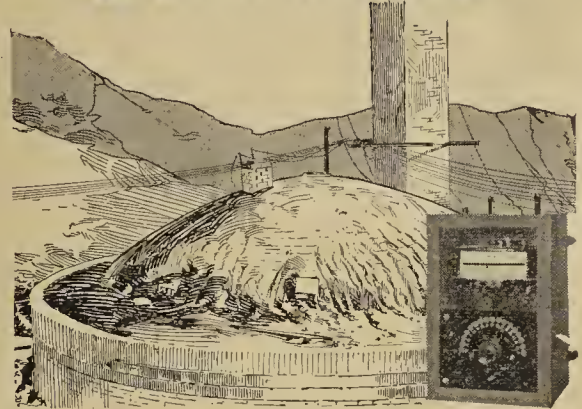
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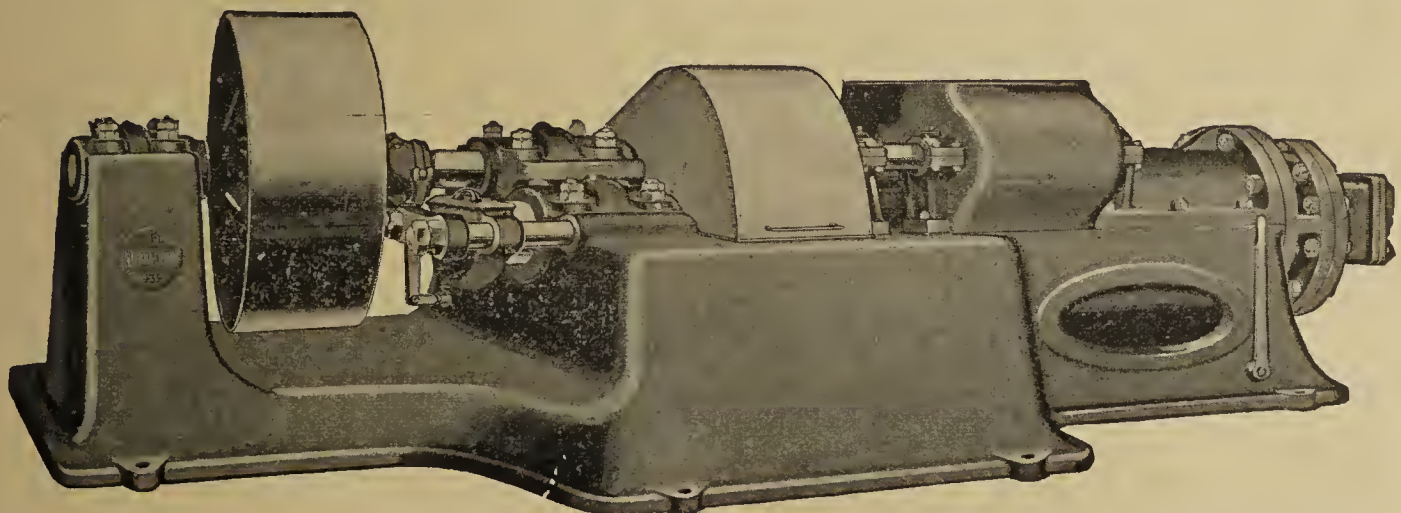


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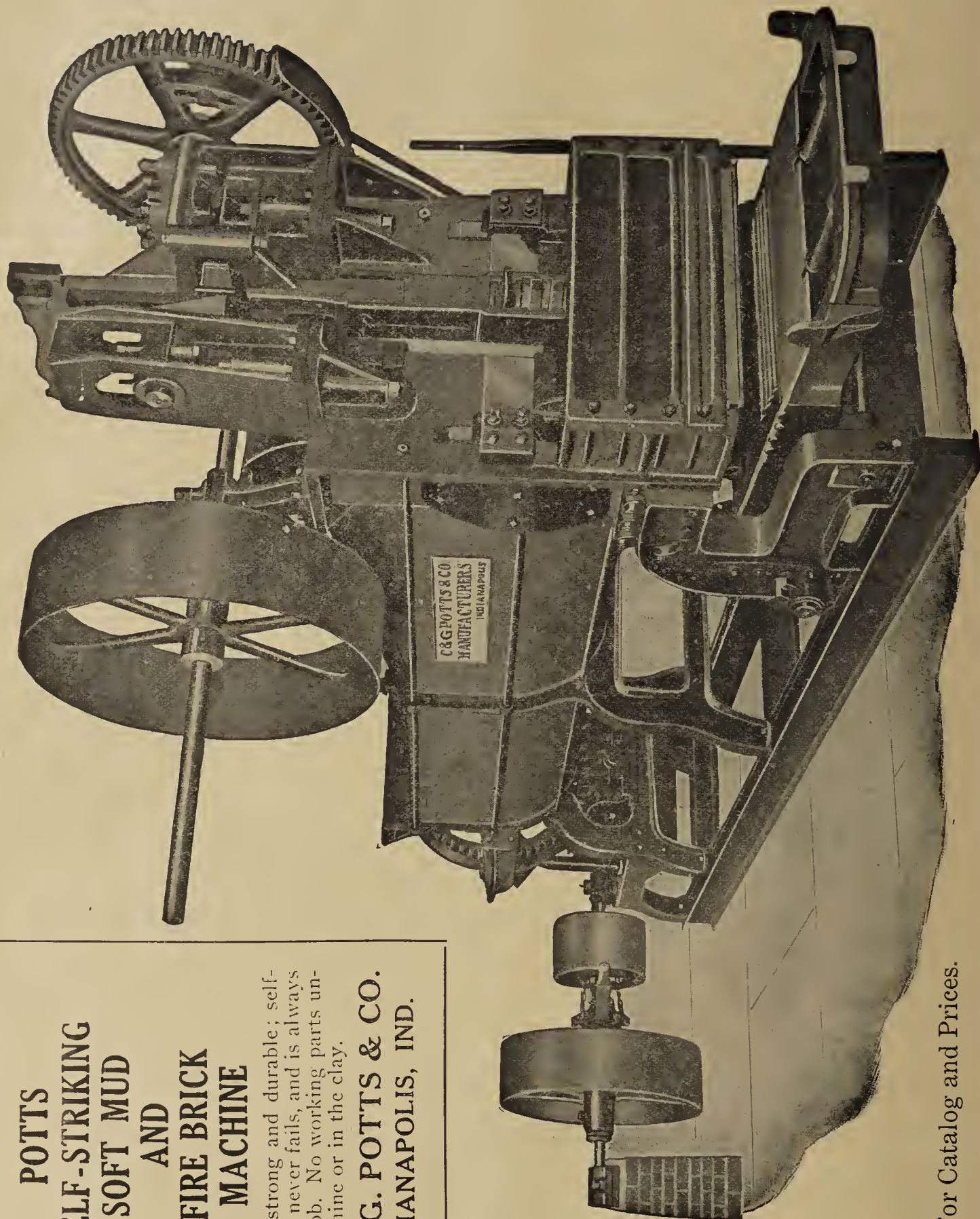
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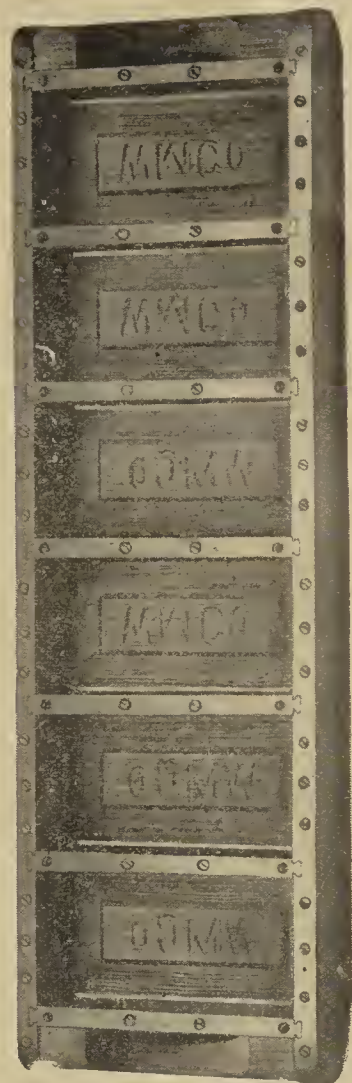
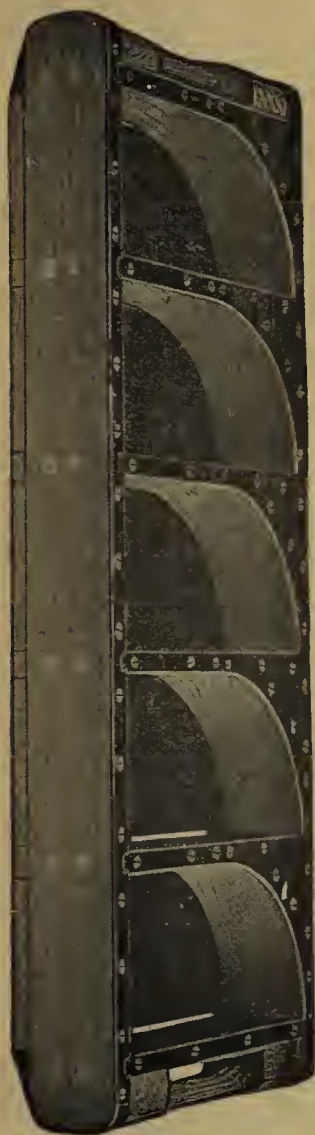
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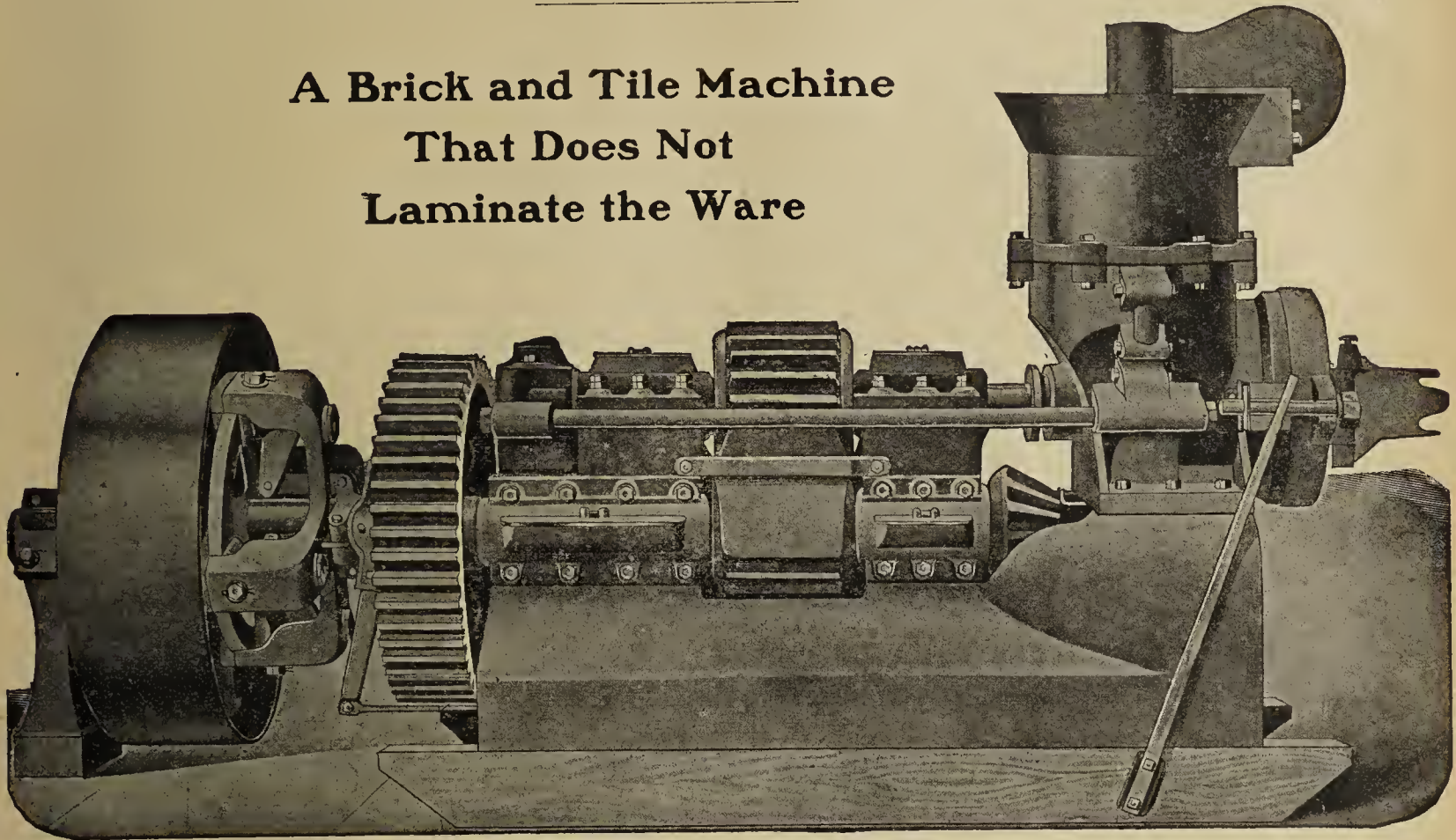
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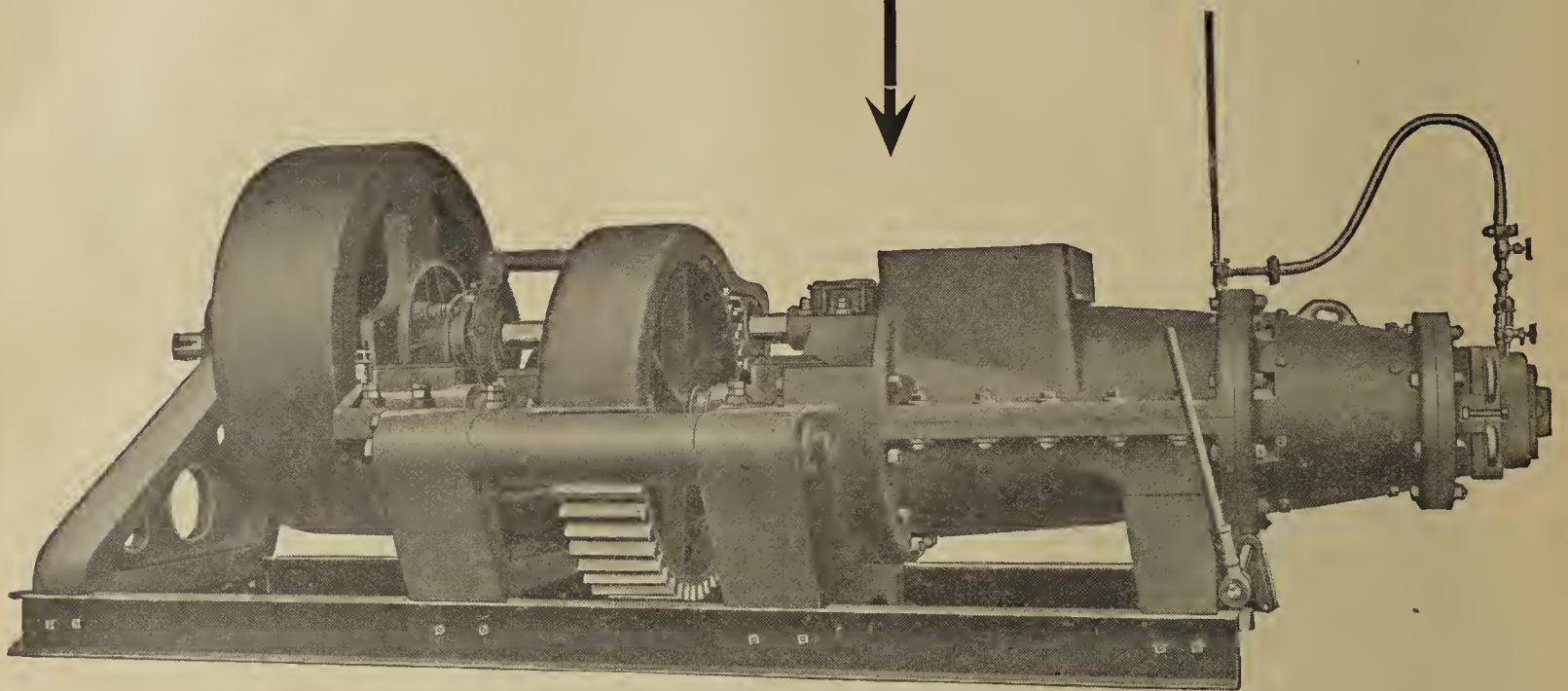
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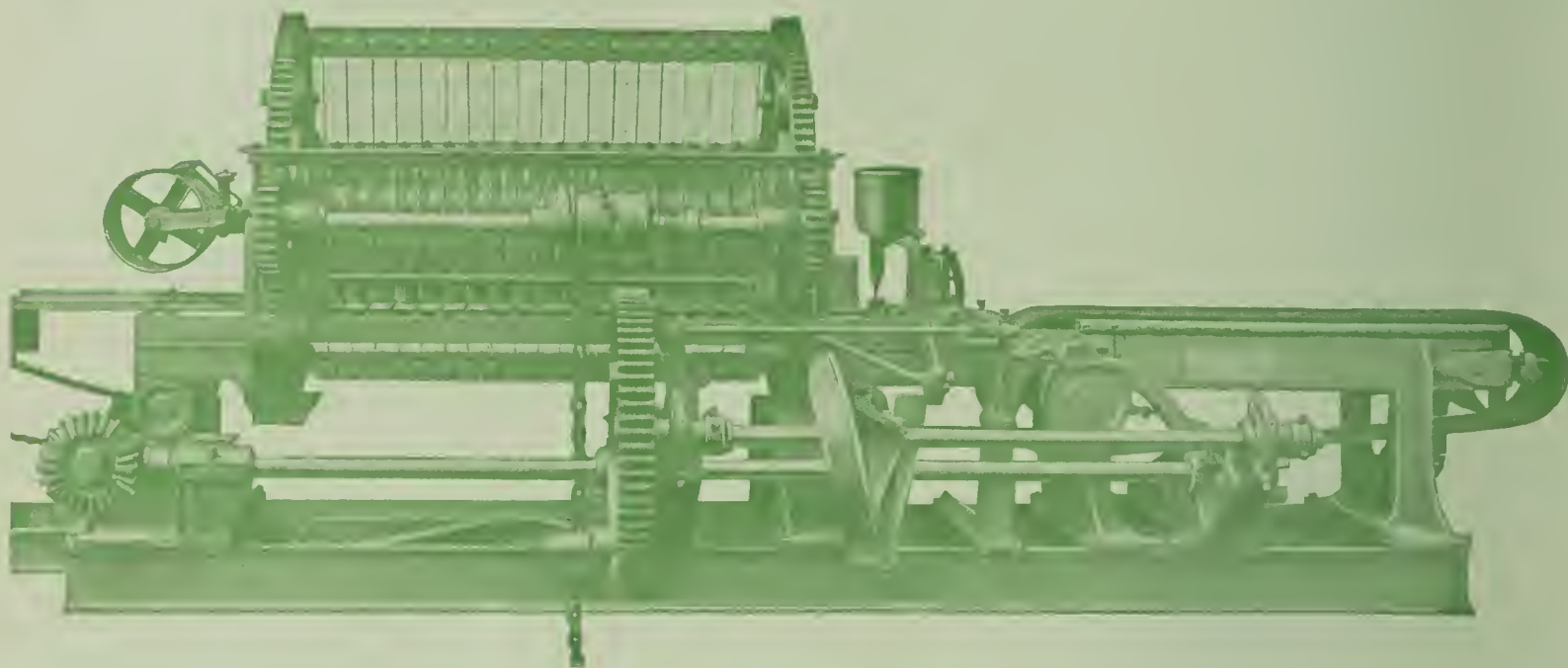
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